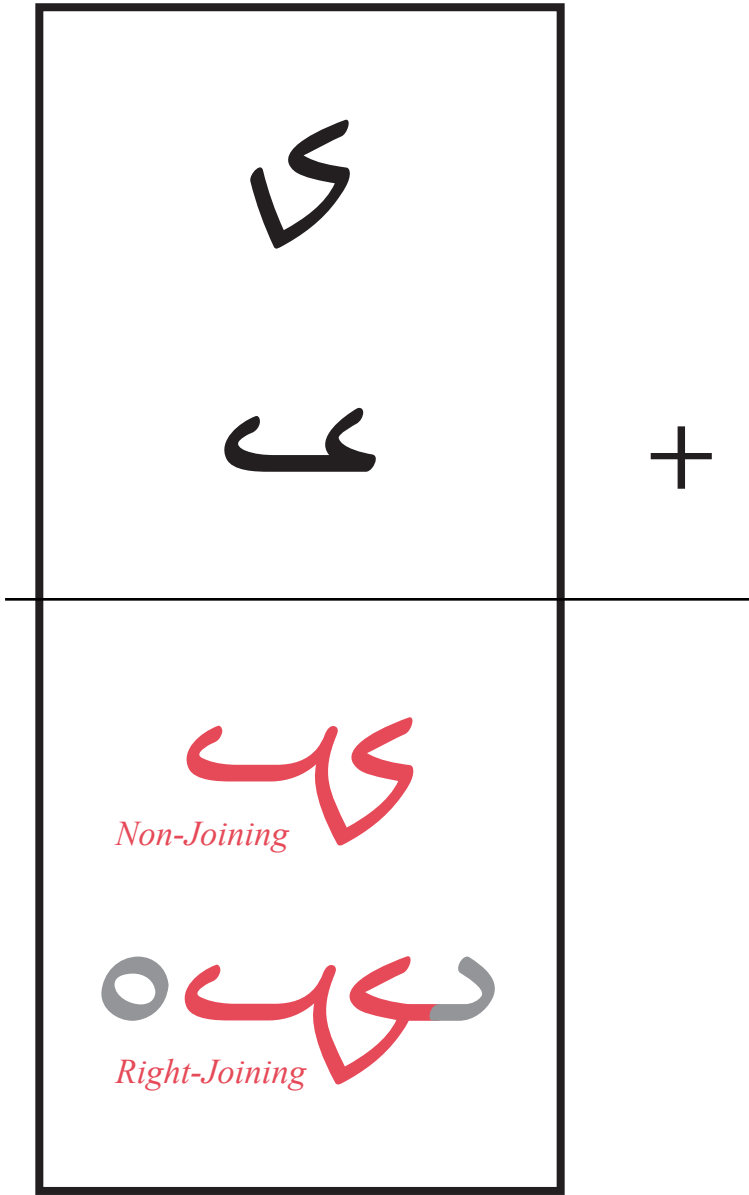**To: Unicode Technical Committee**

From: Ardwan Al-Sabti, Graphic Designer specialized in Mandaic art and typography

Subject: Mandaic KAD

Date: 10 January 2020

Non-Joining

Right-Joining

Mandaic KAD

1 Introduction. Mandaic is a cursive script, letters often merge and change slightly of shape. A common example would be the ligature 'k+ḏ'; both the 'k' and the 'ḏ' are knotted together to form the horizontale ligature kḏ.
This ligature is often used in classic Mandaic as non-joining ligature sepertly or within a word, for example ﻌﻴﺐ in figure 2.
However, it appears also as a Right Joining character, for example the neo-Mandaic word ﻟﻴﺐ or the classic Mandaic ﺑﻴﺐ in figure 4.
A very close equivalant in typography is the Arabic 'lam+alif': which has two unicodes (Non joining ﻻ: U+FEFB) and (Right joining ﻼ: U+FEFC).

2 Non Joining Characters. According to Everson's proposal there are five Right-Joining and three Non-Joining characters in the Mandaic charachter set, which are shown (in table 1) below:

Table 1: Right Joining and Non Joining Characters

Right-joining Mandaic Characters		
Character	**X$_n$**	**X$_r$**
HALQA	ο	ᴖ
AZ	ا	⊦
IN	ᴖ	ᴗ
AKSA	∠	∠
ASH	ϙϙ	ϙϙ
Non-joining Mandaic Characters		
Character	**X$_n$**	
DUSHENNA	⊔	
KAD	ﺑﻴﺐ	
AIN	ع	

Source: "Proposal for encoding the Mandaic script in the BMP of the UCS"
by M. Everson, 2008, p.2

Table 2: The current Unicode list of joining properties

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# Mandaic Characters

0840; MANDAIC HALQA; R; No_Joining_Group
0841; MANDAIC AB; D; No_Joining_Group
0842; MANDAIC AG; D; No_Joining_Group
0843; MANDAIC AD; D; No_Joining_Group
0844; MANDAIC AH; D; No_Joining_Group
0845; MANDAIC USHENNA; D; No_Joining_Group
0846; MANDAIC AZ; R; No_Joining_Group
0847; MANDAIC IT; R; No_Joining_Group
0848; MANDAIC ATT; D; No_Joining_Group
0849; MANDAIC AKSA; R; No_Joining_Group
084A; MANDAIC AK; D; No_Joining_Group
084B; MANDAIC AL; D; No_Joining_Group
084C; MANDAIC AM; D; No_Joining_Group
084D; MANDAIC AN; D; No_Joining_Group
084E; MANDAIC AS; D; No_Joining_Group
084F; MANDAIC IN; D; No_Joining_Group
0850; MANDAIC AP; D; No_Joining_Group
0851; MANDAIC ASZ; D; No_Joining_Group
0852; MANDAIC AQ; D; No_Joining_Group
0853; MANDAIC AR; D; No_Joining_Group
0854; MANDAIC ASH; R; No_Joining_Group
0855; MANDAIC AT; D; No_Joining_Group
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0856; MANDAIC DUSHENNA; U; No_Joining_Group
0857; MANDAIC KAD; U; No_Joining_Group
0858; MANDAIC AIN; U; No_Joining_Group

Source: https://www.unicode.org/Public/UCD/latest/ucd/ArabicShaping.txt , last attempt 03 January 2020

Following the process through the suggestion of R. Pournader's "Joining types for Mandaic" (L2/10-413) and the current list of joining properties at the web (table 2), it can be concluded, that Unicode decided to have this ligature as Non-Joining Mandaic character.

3 Right-Joining behaviour. In the following pages Mandaic manuscripts are presented to dissaprove the Non-Joining behaviour of this character in the Mandaic block. The manuscripts provide clear evidence which indicate the Right-Joining behaviour of U+0857 in the Mandaic script.

ﺣﻚ

U+0857

The ligature "kḏ", is the most used ligature in the mandaic text.This ligature is composed of two characters k (ﻚ = U+084A) with ḏ (ﺣ = U+0856), unicode decided correctly to include it to the Mandaic unicode block, since the ḏ changes slightly of shape when connects with k. However, this doesn't mean by giving this ligature a place in the unicode block, that it should be handled differently than usual! Usually, it should connect from the left exactly like the Mandaic **k** does, and from the right exactly like the Mandaic **d** does!

This is why it should be concluded that this ligature should become a right-joining character in the Mandaic unicode standard.

In figure 4 and 5, examples are shown from the Mandaean manuscripts, which provides clearly that this ligature is a right-joining character. Nevertheless, in spoken Neo-Mandaic there exist also more modern words as bkḏ ﺣﻜﺒ and lkḏ ﺣﻜﻟ (table 3), which Mandaeans nowdays use to communicate through their spoken language. And because of the prove (see Al-Sabti A., 2020) about the right joining ḏ (U+0856), ﺣﻚ U+0857 should become a **Non-Joining** and a **Right-Joining** character.

Table 3: Classic and Neo-Mandaic list of the kḏ ligature

Classic and Neo-Mandaic	transliteration	Unicode	Sources
ﺣﻚ	kḏ	U0857	Figure 1
ﺣﻜﺣ	ḏkḏ	U0856 + U0857	Figure 2
ﻭﺣﻚ	kḏa	U0857 + U0840	Figure 3
ﺣﻜ	ukḏ	U0845 + U0857	Figure 4
ﻭﺣﻜ	ukḏa	U0845 + U0857 + U0840	Figure 5
ﺣﻜﺒ	bkḏ	U0841 + U0857	spoken Neo-Mandaic
ﺣﻜﻟ	lkḏ	U084B + U0857	spoken Neo-Mandaic

(First three rows grouped under **UnJoining kḏ**; last four rows grouped under **Right Joining kḏ**.)
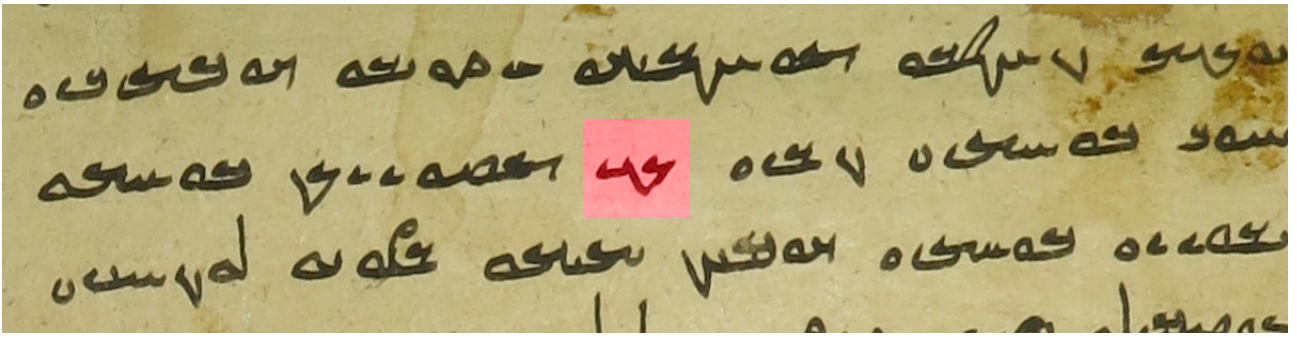
Figure 1 (RRC2M-1: 1675): k + ḏ: ܟܕ
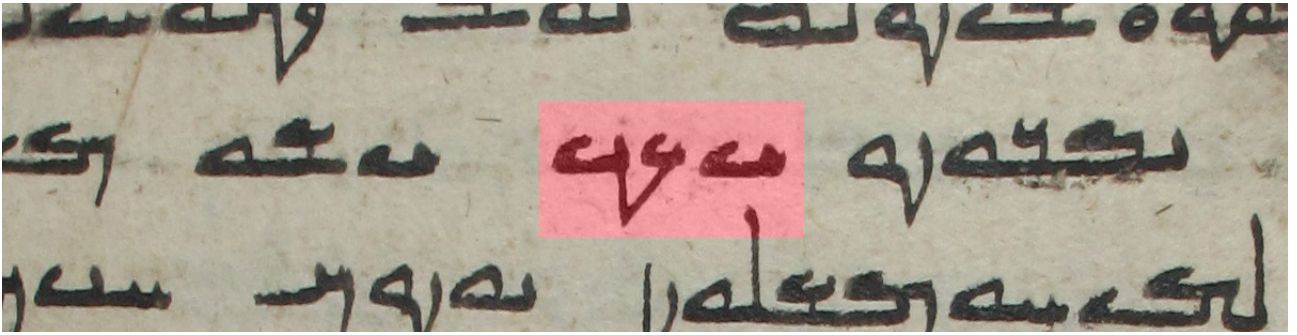
Figure 2 (DC30: 1753): ḏ + kḏ: ܕܟܕ
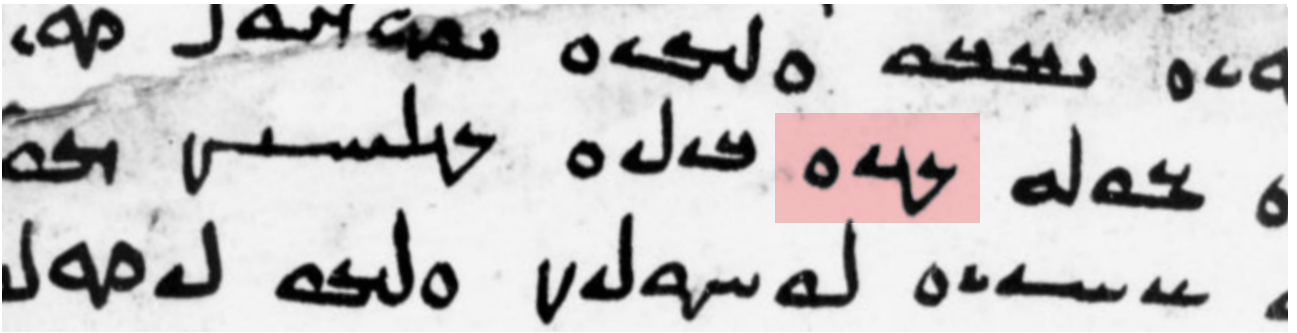
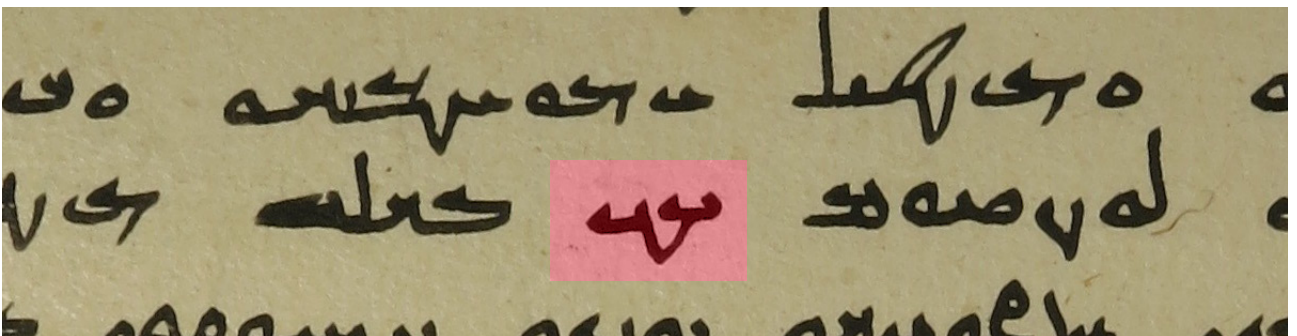**Figure 3 (S16: 1716): kḏ + a : ܟܕܐ**
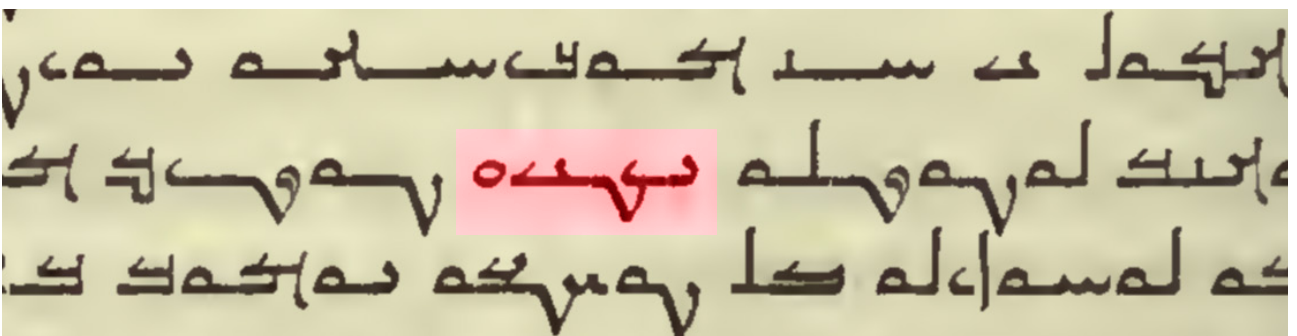

Figure 4 (RRC6D: 1674): u + kḏ: ܘܟܕ

Figure 5 (Zotenberg 1874): u + kḏ + a : ܘܟܕܐ

4 Conclusion. All the Mandaic letters (*including Al-Sabti A., 2019 and 2020*) may join to other letters from the Right side. For this reason the Unicode Technical Committee must correct the joining propperties of this ligature by changing the setting of the joining properties from U(njoining) to **R(ight-Joining)**. Please see the correction in (table 4):

Table 4: The correction of the Unicode list of joining properties

0857; MANDAIC KAD; **R**; No_Joining_Group

The fixed result of the Unicode joining properties should count 0 U(njoining) Characters, 8 R(ight-Joining) Characters and 17 D(ual-Joining) Characters.

5 Acknowledgements

6 References

Photographic evidence
All the photographic sources from the [RRC]: Rbai Rafid Collection are reproduced by kind permission of the custodian of the collection.
Figure 1   1675   Manuscript RRC 2M-1 "Diuan ḏ-mhita uasuta" by Zihrun br Iahia Sam
Figure 2   1753   Manuscript DC30 "Draša ḏ-Yahia" Ram Yuhana br Ram
Figure 3   1716   Manuscript S16 "Diuan Alp Trisar šuialia by Zihrun br Adam Yuhana
Figure 4   1674   Manuscript RRC 6D "Diuan sigia ḏ-dihbaiia" by Zihrun br Iahia Mhatam
Figure 5   1874   Catalogues des Manuscrits S. et Sabeens by Zotenberg

Bibliography
Al-Sabti, A   2015   *Bachelor Thesis*: Explanation of the Mandaic script grammar.
Al-Sabti, A   2019   The Non-Joining U+0858 in the Mandaic Unicode Standard
Al-Sabti, A   2020   The Non-Joining U+0856 in the Mandaic Unicode Standard
Everson, M.   2008   Proposal for encoding the Mandaic script in the BMP of the UCS
Pournader, R. 2010   Joining types for Mandaic
Unicode   2019   List of joining properties
                                    https://www.unicode.org/Public/UCD/latest/ucd/ArabicShaping.txt