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This proposal contains the proposal summary form. Please send any responses to this proposal to Gábor Hosszú (email: hosszu@eet.bme.hu).

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### 1. Summary

The *Khazarian Rovas* /qasariən rova: [/ (KR) is an extinct script that was mainly used in the area of the Khazar Empire (from 6<sup>th</sup> century CE to 965) by the different constituent nations and after the Settlement of Hungarians (895-902 CE) in the Carpathian Basin in the 10<sup>th</sup> century by the Hungarians, Kavars (Khazar subjects rebelled against the Khazar Khagane and than joined the Hungarians) and other joined tribes. There are known relics mainly in *Turkic* including *Common Turkic* and *Ogur*, and also in *As* or *Alan (Preossetian)*.

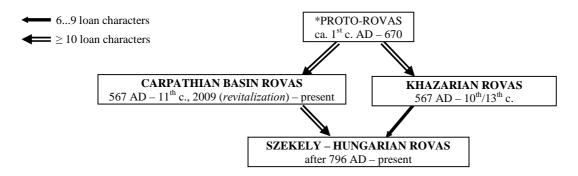
The Khazarian Rovas is exclusively right-to-left; there is no casing and known numerals in the known relics. It belongs to the family of the Rovas scripts, including the *Szekely-Hungarian Rovas* (SHR) and the *Carpathian Basin* 

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<sup>&</sup>lt;sup>1</sup> Vásáry, 2003; Erdélyi, 2004, p. 76

<sup>&</sup>lt;sup>2</sup> Kyzlasov, I.L., 1994

*Rovas* (CBR).<sup>3</sup> Their simplified genealogy is shown below. The \*Proto-Rovas script is a hypothetical common ancestor used North to the Caucasus and the Black See by the As-Alans from the 1<sup>st</sup> c. AD,<sup>4</sup> it is finally derived from the Aramaic script.



Some Khazarian Rovas characters being identical to the appropriate SHR or CBR characters are not proposed to encode individually. Instead of this the appropriate SHR or CBR characters will be used.<sup>5</sup>

#### 2. Some relics

Khumara is an old Khazar fortress on the right side of the river Kuban. One inscription is seen on Fig. 2-1.

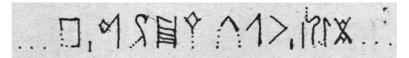


Figure 2-1: Drawing of an inscription from Khumara fortress.

Written in Khazarian Rovas Font	
IPA phonetic transcription	t <sup>u</sup> ɣalas, d͡ʒap <u>di</u> , b <sup>i</sup> ʧigi <sup>ï</sup> r
Translation from Ogur	Tughalas made (built), wrote its inscription.

 $/t^u\gamma^a|^as/$  is name of a nation or a person.<sup>6</sup> The most-right word is the verb /\*ir/ 'write', the Ogur version of the Common Turkic /yaz/. The verb /d\$\frac{3}{a}pdi/'built, did'\ originated from Turkic /yap/; the noun /b\text{if}\text{ig}/\ is the Ogur version of the Common Turkic /b\text{itig}/.\^7

Figure 2-2 A drawing of the Mayaki amphora inscription (made by I. L. Kyzlasov), 8<sup>th</sup>-9<sup>th</sup> century.<sup>8</sup>

Written in Khazarian Rovas Font	:ሃ1:३୬H>:ሃ기/\ H ነ:[ላሾ]
IPA phonetic transcription	[bu <sup>a</sup> ]n <sup>a</sup> r x <sup>a</sup> ɣ <sup>a</sup> nïm d͡ʒ <sup>i</sup> rem β <sup>o</sup> n
Translation from Ogur	(This is) of Khagane Nar [or Anar]. Twenty won.

The Ogur word 'won' was a measurement unit. The first two characters of the inscription are damaged; their transcription "bu" is not proved. "Anar" is an ancient Turkic personal name. 9

<sup>5</sup> Hosszú, 2011b & 2011c

<sup>&</sup>lt;sup>3</sup> Erdélyi, 1982, p. 182

<sup>&</sup>lt;sup>4</sup> Hosszú, 2011a

<sup>&</sup>lt;sup>6</sup> De Goeje, M. J. (ed.), 1892

<sup>&</sup>lt;sup>7</sup> Róna-Tas, 1992, pp. 12-13

<sup>&</sup>lt;sup>8</sup> Klyashtorny, S.G., SA. 1979, № 1;

<sup>&</sup>lt;sup>9</sup> Vékony, 2004



Figure 2-3/a: The photo of the inscription on the Novocherkassk clay flask, from 9<sup>th</sup>-10<sup>th</sup> century<sup>10</sup>

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Figure 2-3/b: The drawing of the Novocherkassk inscription<sup>11</sup>

Written in Khazarian Rovas Font	%\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
IPA phonetic transcription	a ˈʃɛrmˈð bˈð ˈʃɛrmˈð boʃadan
Translation from Kypchak	Oh. Drink we, we drink from [this] bosha.

The bosha was an alcoholic drink, its current version is 'boza' in Hungarian and Turkic. 12

## +×445/1月5.4月17.6人以及らりひ目、そのきまり、そのとろうごうご

Figure 2-4. The Stanitsa Krivyanskoe inscription from the 8<sup>th</sup>-10<sup>th</sup> century. <sup>13</sup>

Written in Khazarian Rovas Font	\*\#\\$\:\#\\$\:\#\\$\:\#\\$\:\#\\$\:\#\\$\:\#\\$\:\#\\$\!#\\$\!
IPA phonetic transcription	βοʃo <u>danu</u> ð <sup>a</sup> βuː <u>danu</u> ʧ <sup>a</sup> rið <u>ni</u> uzag ðax <sup>i</sup> ʧan uaʧag baf <sup>i</sup> st <u>a-a</u>
Translation from As or Alan	'Wosho drink is your one. [This] drink should keep alive him who drinks. For you  Uachag wrote this in.'

In this relic the form *wosho* of the drink *boza* occurs. At the end of the line the  $\A /a/$  in the ligature  $\A /aa/$  is a common determiner in Ossetian language, its meaning: "this".

In 1962 Norman Golb discovered a Khazarian Rovas inscription on the left bottom corner of the Kievan Letter. <sup>14</sup> Due to the historical reasons the Kievan letter is dated to the period between 955 and 961 CE. <sup>15</sup> The precise drawing copied directly from the photo of the original text is shown on *Fig. 2-5*. <sup>16</sup>



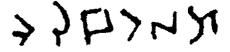


Figure 2-5. The photo of the original Khazarian Rovas inscription on the Kievan Letter and its drawing 17.

Written in Khazarian Rovas Font	スマヘム ぐぐ
IPA phonetic transcription	ογϊδ <u>ïq</u> <u>il</u> ik
Translation from Khazar	We have read. Ilik.

<sup>10</sup> Baichorov, 1989, Table 113

<sup>11</sup> Vékony, 2004, p. 243

<sup>12</sup> http://mek.niif.hu/02700/02790/html/92.html

<sup>&</sup>lt;sup>13</sup> Turchaninov, 1964, pp. 83-84 and 1971, pp. 75-77

<sup>14</sup> Golb-Pristak, 1982

<sup>15</sup> Róna-Tas, 2001, p. 181

<sup>16</sup> Vékony, 2004

<sup>&</sup>lt;sup>17</sup> Brook, web site; Vékony, 2004, p. 278

"Ilik" was the name of the vice-king in the Khazar Empire, 18 who was in charge of the day-to-day operations of the Khaganate. 19 This inscription was an authentication of the letter.



Figure 2-6: Photo<sup>20</sup> and the drawing of the Alsószentmihály (Transylvania, Romania) inscription, 920-950 CE.<sup>21</sup>

Written in Khazarian Rovas Font	First line: & 14 Second line: DMY OMB 1AMD
IPA phonetic transcription	First line: <sup>E</sup> bi <sup>a</sup> tl <sup>ï</sup> ɣ Second line: jy <u>ed</u> i • <u>ky</u> r qar <sup>a</sup> j
Translation from Khazar	First line: 'His mansion is famous.' Second line: 'Jüedi Kür (the) Karaite.'

The word /æb/ was used for larger buildings in the Khazarian building inscriptions, 22 therefore the appropriate translation is "mansion". The word /jyedi/ meant Jewish in Khazar language in this case it was used as a personal name. The word *Kür* /kyr/ means "courageous" and "fearless" in Turkic. The symbol is a typical punctuation mark in the Khazarian Rovas script. The symbol in the third line may be a tamgha.<sup>23</sup>

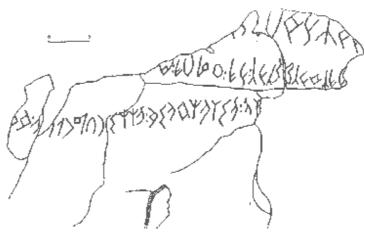


Figure 2-7. The drawing of the inscription of Ermen Tolga (magic text). <sup>24</sup>

<sup>19</sup> Golden 1984, pp. 474-486

<sup>22</sup> Vékony, 1997, p. 110;

<sup>23</sup> Vékony, 1987, pp. 108-117; 1997, pp. 108-117; 2004, pp. 217-230

<sup>18</sup> Golden 1980. p. 162, pp. 184-185

<sup>&</sup>lt;sup>20</sup> Benkő, 1972a, p. 453 and Appendix; Benkő, 1972b <sup>21</sup> Moravcsik, 1984, p. 85; Libisch, 2004

<sup>&</sup>lt;sup>24</sup> Erdniev, 1982, *Fig.* 2-7; Kyzlasov, 1990a, Fig. 13, 14, pp. 42-47; Klyashtornyi & Vásáry, 1987

Written in Khazarian Rovas Font	Second line (upside down): 5: Y>>Y>Y>1 MANAM First line (upside down): > Y5> ハ目 Third line: 5 > AN メミ・ヤチシ・メ 州 Y メミケ・カ
IPA phonetic transcription	<i>Second line</i> : <u>de</u> β <sup>i</sup> di <u>de</u> β ø abam <sup>y</sup> gε <sup>ε</sup> b- <sup>a</sup> ba ø <i>First line</i> : . <sup>u</sup> d byʃi <sup>a</sup> b[a] <i>Third line</i> : a ø : ømε b <sup>a</sup> ʃ <u>de</u> <sup>a</sup> b <sup>a</sup> m byʃi iʃ : m <sup>a</sup> ŋ <sup>a e</sup> dið ø
Translation from Khazar	Second line: 'sir spirit, spirit, think, my father, wise house-father think'  First line: ' . bovine-wizard father'  Third line: ' oh : think, don't think head, eat, my father wizard, drink! For my highlythink'

The Achiktash inscription is seen on Fig. 2-8 from the middle of the  $8^{th}$  century. The text is on the fourth sides of a wooden stick. The stick is broken into three parts, the middle is lost. Therefore the middle part of the inscription in each line is absent. The Achiktash inscription presents the oldest known version of the Khazarian Rovas script. <sup>25</sup>

Figure 2-8 The Achiktash inscription, first half of the 8th century.

In the inscription the glyph variant 1 was used instead of the 1P/p/ and the glyph  $\Omega$ , a variant of the  $\Omega$  ARCHED R  $/r/r^j/$  was in use.

Written in Khazarian Rovas Font	χ Ο χ Ο (Κ << ) (Κ < ) (Κ )	父(〇)< 8至 〈ダ ○ぷ 父(〇)< 8日 〈 () () () () () () () () () () () () ()
IPA phonetic transcription	tir <sup>"</sup> ðug εðe <sup>ø</sup> r <sup>i</sup> n q <sup>a</sup> ð <u>yug</u> h <sup>i</sup> <u>dε</u> ïtð g <sup>o</sup> qïmïn m <sup>i</sup> ð tεg <sup>i</sup> l <sup>a</sup> j s <sup>u</sup> ht <sup>ø</sup> s <sup>y</sup> t h <sup>i</sup> ð q <sup>a</sup> s <sup>a</sup> r <sup>u</sup> ð <sup>u</sup> sï	b <sup>iti</sup> rh[ <sup>ɛ</sup> ŋ/ <sup>i</sup> ŋ <sup>i</sup> ð] iʃ <u>ið</u> <sup>i</sup> b <sup>i</sup> ð q <sup>o</sup> p <sup>ɛ</sup> rt <sup>ɛ</sup> r t [ <sup>a</sup> n <sup>i</sup> ŋ]
Translation from Common Turkic	'He says: the throne of the holy dominus We reading the written stick sent by you Ay! Say it: Sogdian vengeance You, Khazars. Good (=true, credible). End.'	you write [singular or plural] we all heard it avoid, [you] k[now]

## 1X) 118 X11 (X1

Figure 2-9 The drawing of the inscription on the bone-plate of quiver from Homokmégy-Halom<sup>26</sup>

<sup>&</sup>lt;sup>25</sup> Vékony, 1986, Fig. 1

<sup>&</sup>lt;sup>26</sup> Vékony, 1992, p. 42.

It was transcripted by archaeologist G. Vékony and the transcription was improved by Turkologist I. Vásáry.<sup>27</sup> According to Vásáry its text could be either Common Turkic or Ogur.

Written in Khazarian Rovas Font	כאין ופאין X (
IPA phonetic transcription	<sup>o</sup> n <u>oq</u> l <sup>ï</sup> ɣ s <sup>a</sup> ɣd <sup>a</sup> ɣ <sup>ï</sup> n b <sup>a</sup> s
Translation from Turkic	'Triumph with quiver with ten arrows.'

In 1978 during excavations of the Mayatskoe Gorodishche (Russian: Маяцкое городишце, its other name: Mayaki citadel) the longest inscription was found by S. A. Pletneva and G. E. Afanayev. Fig. 2-8 shows the drawing of I. Erdélyi archeologist who participated in the excavation.<sup>28</sup>

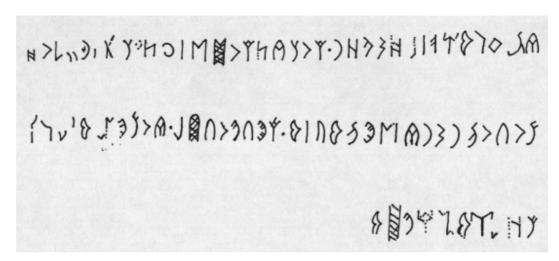


Figure 2-10: The drawing of the inscriptions of Mayatskoe Gorodishche made by architect Balázs Erdélyi.

The ends of first and second lines show a different script, those letters were probable engraved later. The transcription of the texts is the following:

Written in Khazarian Rovas Font	First line: ソコロM > やHAソンヤントラスロンタンロンタンロンタン Second line: おしいかの しまい こうかい かんしょう といっと ままま ままま ままま ままま ままま ままま ままま しょうしょ といっと といっと といっと といっと といっと といっと といっと といっ
IPA phonetic transcription	First line: <u>da nu</u> <sup>a</sup> q <sup>ø</sup> ð <sup>y</sup> g s <sup>u</sup> β <sup>a</sup> s <sup>i</sup> l <sup>ε</sup> t͡ʃ m x <sup>a</sup> ɣ an b <sup>i</sup> ð <sup>i</sup> ŋ <u>de</u> r <sup>i</sup> b ð <sup>a</sup> lt sað in [] Second line: uð d <sup>i</sup> ðy <sup>o</sup> n m n <u>da</u> lt gy gy sig bedið di daðu in g [] Third line: on g r eg n bi <sup>ø</sup> g
First line: 'Don [river], white river Ödüg, As country, [oh] my brother-khagane our land, of Sawirs'  Second line: 'Ud Didü On here in [this] country ornamented many works. This writing is of Third line: 'Mansion of Onagh Tegin. Extol it.'	

In 1948 a rounded stone made from stone for spindle was explored during the archaeological excavations of V. P. Levasova near Minusinsk. The date of the relic is the 8<sup>th</sup>-9<sup>th</sup> century. Fig. 2-11 presents the photo of the spindle disk<sup>29</sup> and the drawing of the inscription made by G. Vékony. The transcription was improved by Turkologist I. Vásáry.<sup>30</sup>

<sup>29</sup> TÜRIK BITIG, web site

30 Vásáry, 2010-2011

<sup>&</sup>lt;sup>27</sup> Vékony, 2004, pp. 56-57; Vásáry, 2010-2011; Hosszú, 2011a

<sup>&</sup>lt;sup>28</sup> Kyzlasov, 1990; p. 16



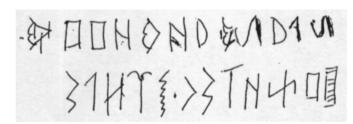


Figure 2-11: The photo of the spindle of Minusinsk (left) and the inscription broken into two rows (right).

Written in Khazarian Rovas Font	· D□□NDND · D✓D1✓ 31NT} · >>TN+□[
IPA phonetic transcription	ip-jig jygyrryg. <sup>ø</sup> rtylm <sup>ε</sup> ð (a)s <sup>u</sup> ɣ <sup>a</sup> p <sup>a</sup> m
Translation from Ogur	'(This) thread-spindle [is] fast. My aunt (A)sugh does not hide herself.'

An interesting feature is the use of the mirrored glyph  $\sqrt{I}$  for the GH UU / $\sqrt{I}$ . A glyph variant of the Khazarian Rovas  $\frac{1}{2}$  Z/t/z/ was used here:  $\frac{1}{2}$ . The personal name in the inscription can be  $\frac{Asugh}{asug}$  or  $\frac{Sugh}{sug}$ .

Kochkina published in 1985 an inscription on the handle of the vessel, see Fig. 2-12 and dated to 11th -12th c.31 Khalikov dated the inscription to 12<sup>th</sup>-13<sup>th</sup> c.<sup>32</sup> The leftmost character of the inscription could be the KR punctuation mark: COLON. The transcription is seen below. The  $d^y f$  'dream' and the  $b^y t^y n$  transcription were created by G. Hosszú. Turkologist I. Vásáry improved its first part to /d<sup>u</sup>4/ and he gave two possible meanings for the second part.<sup>33</sup>



Written with Khazarian Rovas font	: >0> 4>
IPA phonetic transcription	d <sup>y</sup> ⁴ b <sup>y</sup> t <sup>y</sup> n
Translation from Ogur	'before dream' or 'all dream'

Figure 2-12: The Bilyar inscription (11<sup>th</sup> -13<sup>th</sup> c.) and its transcription.

<sup>&</sup>lt;sup>31</sup> Kochkina, 1983; 1985 pp. 54-80 <sup>32</sup> Khalikov, 1988 <sup>33</sup> Vásáry, 2010-2011

## 3. Unicode Character Properties

In the following the proposed naming and coding of the KHAZARIAN ROVAS script is listed. These charts contain only proposed assignments and should not be considered valid until such time as the Unicode Consortium formally accepts them and ISO/IEC JTC1/SC2 formally approves them after an international ballot.

#### 3.1. Code chart of the KHAZARIAN ROVAS in the SMP

	1xx0	1xx1
0	<b>&gt;</b>	T
	1xx00	1xx10
1	C	M
	1xx01	1xx11
2	Ŷ	0
	1xx02	1xx12
3	N	1
	1xx03	1xx13
4	$\cap$	yı
	1xx04	1xx14
5	A	Ċ
	1xx05	1xx15
6	М	$\Omega$
	1xx06	1xx16
7	ф	S
	1xx07	1xx17
8	8	Ŋ
	1xx08	1xx18
9	1,1	4
	1xx09	1xx19
A	<b>&gt;</b>	4
	1xx0A	1xx1A
В	abla	8
	1xx0B	1xx1B
C	U	X
	1xx0C	1xx1C
D	<b>&gt;</b>	М
	1xx0D	1xx1D
E	ሃ	Х
	1xx0E	1xx1E
F	X	
	1xx0F	1xx1F

#### 1xx00 KHAZARIAN ROVAS Characters 1xx2F

- 1xx00; KHAZARIAN ROVAS LETTER ANGLED B
- 1xx01; O KHAZARIAN ROVAS LETTER ARCHED B
- 1xx02; Y KHAZARIAN ROVAS LETTER RAISED B

- 1xx05; A KHAZARIAN ROVAS LETTER FORKED D
- 1xx06; M KHAZARIAN ROVAS LETTER ANGLED E
- 1xx07;  $\phi$  KHAZARIAN ROVAS LETTER F
- 1xx09; KHAZARIAN ROVAS LETTER TRIPLE GH
- 1xx0A: **>** KHAZARIAN ROVAS LETTER FORKED CH

- 1xx0D; Y KHAZARIAN ROVAS LETTER ANGLED K
- 1xx0E; Y KHAZARIAN ROVAS LETTER ARCHED L
- 1xx0F; X KHAZARIAN ROVAS LETTER CROSSED L
- 1xx10; T KHAZARIAN ROVAS LETTER FORKED L
- 1xx11; M KHAZARIAN ROVAS LETTER LT
- 1xx12; O KHAZARIAN ROVAS LETTER ROUND M
- 1xx13; \( \mathbf{L} \) KHAZARIAN ROVAS LETTER ANGLED N
- 1xx14; Y KHAZARIAN ROVAS LETTER O
- 1xx15; C KHAZARIAN ROVAS LETTER ARCHED Q
- 1xx16;  $\Omega$  Khazarian rovas letter arched r
- 1xx17; \( \infty \) KHAZARIAN ROVAS LETTER SH
- 1xx19; Y KHAZARIAN ROVAS LETTER SHL
- 1xx1A; Y KHAZARIAN ROVAS LETTER FORKED SZ
- 1xx1B; 8 KHAZARIAN ROVAS LETTER ARCHED T
- 1xx1C; X KHAZARIAN ROVAS LETTER CENTRAL T
- 1xx1D; M KHAZARIAN ROVAS LETTER UE
- 1xx1F: KHAZARIAN ROVAS SEPARATOR LARGE

## 3.2. Code chart of the SEPARATOR DOT ABOVE in Combining Diacritical Marks Supplement block (BMP)

## 1DC0 Combining Diacritical Marks Supplement (portion) 1DFF

	1Dxx
X	៎
	1Dxx

1Dxx • SEPARATOR DOT ABOVE

- used historically in Khazarian Rovas script as word separator
- → 0307 Combining Dot Above

## 3.3. Code chart of the PUNCTUATION SYMBOL in the Supplemental Punctuation block of the BMP

**2E00** Supplemental Punctuation (portion)

**2E7F** 

	27x
X	1 27xx

#### **Khazarian Rovas Punctuation**

27xx I SHORT LOW VERTICAL BAR

- Word separator in some historic Khazarian Rovas inscriptions
- → 05C0 Hebrew Punctuation Paseq

### 4. Fundamental decisions taken in the encoding

#### 4.1. Description of the character repertoire

The use of the Khazarian Rovas script for different languages led to the duplication of some Khazarian Rovas characters. In the following the parts of the character repertoire are detailed, see *Table 4.2-1*.

Glyph	Name of the Khazarian Rovas character	IPA symbol	Examples of the glyph in the relics
Y	A	a/æ	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-7</i> , in Khazar Alsószentmihály, 920-950 CE, <i>Fig. 2-6</i> , in Khazar, <i>glyph:</i>
Χ	В	b	Halom, Fig. 2-9, in Common Turkic
<b>&gt;</b>	ANGLED B	b	Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-3/a &amp; b</i> , in Kypchak Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., <i>Fig. 2-12</i> , in Ogur
U	ARCHED B	b/β	Mayatskoe G. large inscr., 9th c., Fig. 2-10, in Khazar
Ŷ	RAISED B	b	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
N	CS	ʧ/s	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-4, in As/Alan
>	D	d/ð /d͡ʒ	Kievan letter, between 955-961 CE, <i>Fig. 2-5</i> , in Khazar Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., <i>Fig. 2-12</i> , in Ogur

Glyph	Name of the Khazarian Rovas character	IPA symbol	Examples of the glyph in the relics
V	ARCHED D	d/di/dæ/ɟ/ ʝ/d͡ʒ	Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-3/a & b, in Kypchak
У	FORKED D	d	Halom, Fig. 2-9, in Common Turkic
)	Е	ε	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Khazar
М	ANGLED E	ε	Achiktash, first half of the 8 <sup>th</sup> c., Fig. 2-8, in Bashkir
Ĭ	CLOSE E	е	Achiktash, first half of the 8 <sup>th</sup> c., Fig. 2-8, in Bashkir
ф	F	f	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-4, in As/Alan
8	CLOSE G	g/ɣ	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-7</i> , in Khazar Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11, 12</i> , in Ogur
λ	FORKED G	g	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Ogur
И	GH UU	γ/g	Kievan letter, between 955-961 CE, Fig. 2-5, in Khazar
	TRIPLE GH	γ	Halom, Fig. 2-9, in Common Turkic
1	СН	h	Achiktash, first half of the 8 <sup>th</sup> c., Fig. 2-8, in Bashkir
ク	FORKED CH	X	Mayatskoe Gorodishche, 9 <sup>th</sup> c., Fig. 2-10 in Khazar
Л	ANGLED CH	X	Mayaki amphora, 8 <sup>th</sup> -9 <sup>th</sup> c., Fig. 2-2, in Ogur
U	ARCHED CH	×	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-4, in As/Alan
)	I	i/ï	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
1	ANGLED I	i	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
4	II	ï	Khumara, cc. 9 <sup>th</sup> c., <i>Fig. 2-1</i> , in Khazar Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11, 12</i> , in Ogur
D	J	j	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
0	K	q	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
<b>&gt;</b>	ANGLED K	k	Kievan letter, between 955-961 CE, Fig. 2-5, in Khazar
В	KUE	ky	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
ነ	ARCHED L	l	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Khazar
χ	CROSSED L	l	Halom, Fig. 2-9, in Common Turkic
T	FORKED L	l	Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11, 12</i> , in Ogur
)	SIMPLE L	J/l	Mayatskoe Gorodishche, 9 <sup>th</sup> c., Fig. 2-10 in Khazar
М	LT	lt	Mayatskoe Gorodishche, 9 <sup>th</sup> c., Fig. 2-10 in Khazar
}	M	m	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-7, in Khazar
0	ROUND M	m	Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-3/a & b, in Kypchak
)	N	n	Halom, Fig. 2-9, in Turkic Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., Fig. 2-12, in Ogur
ሃ	NY	n	Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-3/a &amp; b</i> , in Kypchak Achiktash, first half of the 8 <sup>th</sup> c., <i>Fig. 2-8</i> , in Bashkir, <i>glyph:</i> (
1	ANGLED N	n	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Khazar, glyph variant: <b>4</b>
y	NG	ŋ	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-7, in Khazar
'n	0	o/u	Kievan letter, between 955-961 CE, Fig. 2-5, in Khazar Mayatskoe G., 9 <sup>th</sup> c., Fig. 2-10 in Khazar, glyph variant:
ş	OE	Ø/Y	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-7, in Khazar
			Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Khazar

Glyph	Name of the Khazarian Rovas character	IPA symbol	Examples of the glyph in the relics
1	SIMPLE P	р	Achiktash, first half of the 8 <sup>th</sup> c., Fig. 2-8, in Bashkir
X	Q	q/oq/uq	Achiktash, first half of the 8 <sup>th</sup> c., <i>Fig. 2-8</i> , in Bashkir Halom, <i>Fig. 2-9</i> , in Common Turkic
C	ARCHED Q	q	Achiktash, first half of the 8 <sup>th</sup> c., Fig. 2-8, in Bashkir
И	R	r	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar
Ω	ARCHED R	r/r <sup>j</sup> (palatal r)	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-4</i> , in As/Alan Achiktash, 8 <sup>th</sup> c., <i>Fig. 2-8</i> , in Bashkir, <i>glyph variant</i> $\bigcap$
	CLOSE R	r	Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11, 12</i> , in Ogur
S	SH	ſ	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-4, in As/Alan
Ŋ	ARCHED SH	ſ	Mayatskoe Gorodishche, 9 <sup>th</sup> c., Fig. 2-10 in Khazar
Υ	ZS	ſ	Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-3/a & b, in Kypchak
4	SHL	4	Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., Fig. 2-12, in Ogur
	SZ	S	Halom, Fig. 2-9, Common Turkic
Ψ	FORKED SZ	S	Mayatskoe Gorodishche, 9 <sup>th</sup> c., Fig. 2-10 in Khazar Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., Fig. 2-11, 12, in Ogur
8	ARCHED T	t	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Khazar
X	CENTRAL T	t	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-4, in As/Alan
₽	CLOSE T	t	Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., Fig. 2-12, in Ogur
χ	TY	t	Khumara, cc. 9 <sup>th</sup> c., <i>Fig. 2-1</i> , in Khazar Mayatskoe G., 9 <sup>th</sup> c., <i>Fig. 2-10</i> in Khazar, <i>glyph variant:</i> \textbf{Y}
М	UE	y/ø	Alsószentmihály, 920-950 CE, <i>Fig. 2-6</i> , in Khazar Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11, 12</i> , in Ogur, <i>glyph variant</i> : N
1	OPEN V	β/b	Ermen Tolga, 8 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-7, in Khazar
Х	Z	z/t	Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Fig. 2-11</i> , in Ogur, <i>glyph:</i> \(\forall \), <i>sound:</i> /\(\forall \) Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-4</i> , in As/Alan, <i>sound:</i> /\(\forall \)

Table 4.2-1: The Khazarian Rovas letters and examples of each glyph in various relics.

The following characters are identical to the appropriate to the SHR or CBR characters, *see Fig. 4.2-2*. The Rovas characters from SHR or CBR, which are proposed in parallel, shall be used here.<sup>34</sup>

Glyph	Name
Y	CARPATHIAN BASIN ROVAS CAPITAL LETTER A
Χ	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER B
>	CARPATHIAN BASIN ROVAS CAPITAL LETTER D
Э	CARPATHIAN BASIN ROVAS CAPITAL LETTER E
Ĭ	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER CLOSE E
λ	CARPATHIAN BASIN ROVAS CAPITAL LETTER FORKED G
1	CARPATHIAN BASIN ROVAS CAPITAL LETTER CH
)	CARPATHIAN BASIN ROVAS CAPITAL LETTER I
1	CARPATHIAN BASIN ROVAS CAPITAL LETTER ANGLED I
গ	CARPATHIAN BASIN ROVAS CAPITAL LETTER II

<sup>&</sup>lt;sup>34</sup> Hosszú, 2011c

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Glyph	Name
D	CARPATHIAN BASIN ROVAS CAPITAL LETTER J
<b>♦</b>	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER K
В	CARPATHIAN BASIN ROVAS CAPITAL LETTER KUE
>	CARPATHIAN BASIN ROVAS CAPITAL LETTER SIMPLE L
3	CARPATHIAN BASIN ROVAS CAPITAL LETTER M
)	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER N
y	CARPATHIAN BASIN ROVAS CAPITAL LETTER NG
ン	CARPATHIAN BASIN ROVAS CAPITAL LETTER NY
•	CARPATHIAN BASIN ROVAS CAPITAL LETTER OE
1	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER P
1	CARPATHIAN BASIN ROVAS CAPITAL LETTER SIMPLE P
Χ	CARPATHIAN BASIN ROVAS CAPITAL LETTER Q
И	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER R
	CARPATHIAN BASIN ROVAS CAPITAL LETTER CLOSE R
I	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER SZ
Ð	CARPATHIAN BASIN ROVAS CAPITAL LETTER CLOSE T
X	CARPATHIAN BASIN ROVAS CAPITAL LETTER TY
N	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER GH UU
1	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER OPEN V
Υ	SZEKELY-HUNGARIAN ROVAS CAPITAL LETTER ZS

*Table 4.2-2:* The Khazarian Rovas characters being identical to the proposed other kind of Rovas characters.

#### 4.2. Diacritic mark

There is only one diacritic mark in Khazarian Rovas script, the SEPARATOR DOT ABOVE  $\dot{\circ}$  is a diacritic; its role is signing the end of the word. It was used in the Alsószentmihály inscription, see *Fig. 2-4*.

#### 4.3. Punctuation

Table 4.4-1 presents the punctuation marks of the Khazarian Rovas script.

Glyph	Name	Examples of the glyph in the relics		
•	WORD SEPARATOR MIDDLE DOT	Alsószentmihály, 920-950 CE, <i>Fig. 2-6</i> , in Khazar Novocherkassk, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-3/a & b, in Kypchak Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., <i>Sec. 4.2.15</i> , in Khazar Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., <i>Fig. 2-4</i> , in As/Alan		
•	COLON	Mayaki amphora, 8 <sup>th</sup> -9 <sup>th</sup> c., Fig. 2-2, in Ogur Bilyar, 11 <sup>th</sup> -13 <sup>th</sup> c., Fig. 2-12, in Ogur		
	TRICOLON	Stanitsa Krivyanskoe, 9 <sup>th</sup> -10 <sup>th</sup> c., Fig. 2-7, in As/Alan		
I	SHORT LOW VERTICAL BAR	Khumara, cc. 9 <sup>th</sup> c., Fig. 2-1, in Ogur		
	KHAZARIAN ROVAS SEPARATOR LARGE	Alsószentmihály, 920-950 CE, Fig. 2-6, in Khazar Minusinsk, 8 <sup>th</sup> -9 <sup>th</sup> c., Sec. 2-11, 12, in Ogur, with also a glyph variant:		

Table 4.4-1: The Khazarian Rovas separators and the origin of each glyph.

Proposal for encoding the Khazarian Rovas script in the SMP of the UCS - 13 / 19

*Table 4.4-2* shows the already existing Unicode encoded characters corresponding to the appropriate Khazarian Rovas punctuation marks.

Glyph	Name of the Khazarian Rovas character	Name and code point of the Unicode Character	
•	WORD SEPARATOR MIDDLE DOT	'WORD SEPARATOR MIDDLE DOT' (U+2E31) from the Supplemental Punctuation block	
•	COLON	COLON (U+003A) from the Basic Latin block	
:	TRICOLON	'TRICOLON' (U+205D) from the General Punctuation block	

Table 5.4-2: The Khazarian Rovas and the corresponding Unicode coded characters.

The KHAZARIAN ROVAS SEPARATOR LARGE is script-specific and therefore belongs into the KHAZARIAN ROVAS block, it used mostly at the end of the sentences. The ISHORT LOW VERTICAL BAR is proposed to encode in the Supplemental Punctuation block of the BMP. The SHORT LOW VERTICAL BAR differs from the HEBREW PUNCTUATION PASEQ' (U+05C0), since it is much shorter than the character height.

#### 4.4. Ligatures

Ligatures were frequently used in the Khazarian Rovas script. These ligatures do not need individual code points, since they are stylistic, only, that is, whether the text means the same if somebody substitute ligatures, or remove them. Two ligatures are systematic, used regularly, similarly to the Arabic LAM-ALEF or the CH in Fraktur.

Glyph	Name	Transcription	Constituents of the systematic ligatures
M	DA	<u>da</u>	ARCHED D /d/ + Y A /a/
М	DI	de/di/ed	$\bigcap$ ARCHED D $/d/ + 1$ ANGLED I $/i/e/$

The rest of the ligatures are not systematic, they are applied on occasion. Therefore, they can be represented by sequences of characters. Their implementations will need to give the user localized control over ligation (perhaps by supporting ZWJ). *Following table* presents some examples of the non-systematic ligatures from the relics.

Glyph	Name	Transcription	Constituents of the non-systematic ligatures		
Y	AA	<u>aa</u>	\( \text{A} / \text{a} / + \( \text{A} / \text{a} / \)		
W	ATLIGH	<u>ªtl</u> ïɣ	$\Upsilon$ TY /t/ + $\Im$ SIMPLE L /l/ + $\Pr$ GH UU / $\gamma$ /		
Ŷ	BAN	<u>ban</u>	♦ RAISED B /b/ + ↑ A /a/ + ↑ N /n/		
Ħ	CSI	фī	₿cs/ʧ/+1angledi/i/e/		
⇒	DKE	<u>δ̇kε</u>	$\rightarrow$ D /ð/ + $\rightarrow$ ANGLED K /k/ + $\uparrow$ A / $\epsilon$ /		
**	ER	<u>εr</u>	$Y A / \epsilon / + H R / r /$		
}	IL	<u>і</u> І	1 angled i /i/ + <b>3</b> simple l /l/		
)	IN	<u>ïn</u>	)		
P	IQ	<u>ïq</u>	1 ANGLED I /i/e/ + Ø K /q/		
R	JI	j <u>i</u>	$D_{\rm J}/j/+1$ angled I /i/e/		
*,*	ISHAD	<u>j<sup>°</sup>ð</u>	Ÿ ZS /ʃ/ + > D /ð/		
守	RAT	rat	$M R /r / + Y A / \epsilon / + X TY / t /$		
H*	TEGH	<u>t<sup>e</sup>χ</u>	$\Upsilon$ TY /t/ + $N$ GH UU / $\gamma$ /		

#### 4.5. Ordering

In ordering the Common Template Table defined in the International Standard ISO/IEC 14651 is adapted.<sup>35</sup> The ordering requires different levels:

#### Level 1

The first level renders the texts to be sorted case-insensitive and insensitive to diacritical marks, and to all special characters. In the case of the Khazarian Rovas the following order is required:

 $\begin{tabular}{ll} $Y = A < X = A \\ $A = A \\$ 

#### Level 2

This breaks ties on quasi-homographs (strings differ only because they have different diacritical marks). In the case of the Khazarian Rovas there is only one diacritical mark, the called SEPARATOR DOT ABOVE . However, it is not an accent, but a word separator. It has the same effect as writing -- in other scripts -- a space after the character, it is recommended to process this combining character itself as a space, i.e. assign it a level 1 weight equivalent to that of the space, with also a level 2 weight indicating it is not a space but something else (to distinguish with the case one enters a real space after the character). The basic characters should nevertheless have a level 2 weight indicating a base character (for hypothetical cases where other combining characters are used).<sup>36</sup>

#### Level 3

This level breaks ties for quasi-homographs that differ only because uppercase and lowercase characters are used. In case of the Khazarian Rovas script there is not casing. Therefore this level is not required.

#### Level 4

The fourth level breaks the final tie that, in general, does not correspond to any strong tradition, namely, the tie between quasi-homographs differing only because they contain special characters. In the case of the Khazarian Rovas the Level 4 of the ordering does not differ from similar level in the case of the usual European Latin orthography.

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<sup>35</sup> LaBonté, 2007a & 2007b

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### 7. Appendix: Proposal Summary Form

#### ISO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646<sup>37</sup>.

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

Please read Principles and Procedures Document (P & P) from  $\underline{\underline{\underline{http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html}}$  for guidelines and details before filling this form.

Please ensure you are using the latest Form from <a href="http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html">http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html</a>. See also <a href="http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html">http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html</a>. For latest Roadmaps.

#### A. Administrative

1. <b>Title:</b>		Proposal for encoding the Khazarian Rovas script in the SMP of the UCS					
2. Requester's nam	ne:	Hungarian Standards Institution					
3. Requester type (Member body/Liaison/Individua			contribution): Member bo			ody	
4. Submission date:				January 21, 2011			
5. Requester's reference (if applicable):			http://www.mszt.hu/angol/index_eng.htm			tm	
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):					Yes		
Proposed name of script:		Khazarian Rovas					
h The man							
b. The proposal is for addition of character(s) to an existing block:				No			
Name of the existing block:							
2. Number of characters in proposal:						34	
3. Proposed category (select one from below – see section 2.2 of P&P document):							
A-Contempora	ry _	B.1-Specialized (small collection) B.2-Specialized (large collection)				lection)	

<sup>.</sup> Form number: N3152-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)

C-Major extinct		ted extinct		G 01	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 na	a. If YES, are the names in accordance with the "character naming guidelines"							
in Annex L o	f P&P docu	ment?				Yes		
b. Are the character shapes attached in a legible form suitable for review?  5. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for								
publishing the standa	publishing the standard? Dr. Gábor Hosszú							
If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools								
used: Dr. Gábor Hosszú, FontCreator 5.6, hosszu@eet.bme.hu  6. References:								
a. Are references (to	other charac	eter sets, dicti	onaries, descripti	ve texts	etc.) provided?	Yes		
b. Are published exa	mples of use	e (such as san	ples from newsp	apers, m	agazines, or other sources)			
of proposed character. Special encoding issues:	rs attached?				Yes			
Does the proposal ac	dress other	aspects of cha	aracter data proce	ssing (if	applicable) such as input,			
presentation, sorting	searching,	indexing, trar	sliteration etc. (it	f yes plea	ase enclose information)?	<u>Yes</u>		
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 <a href="http://www.unicode.org">http://www.unicode.org</a> . for such information on other scripts. Also see <a href="http://www.unicode.org/Public/UNIDATA/UCD.html">http://www.unicode.org/Public/UNIDATA/UCD.html</a> . and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard. – See below.								
C. Technical – Justification	'n							
Has this proposal for add     If YES explain		racter(s) been	submitted before	e?		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.)?  Yes							
If YES, with whom?  National Standardisation Technical Committee called Informatics (MSZ)  the Hungarian Standards Institution								
				Ro	vas Foundation			
	Péter Füzi, Dr. Gábor Hosszú, Angéla Ócsai, Tamás Rumi, László Sípos, Tamás Somfai, Levente Sütő, Árpád Zubrits et al.							
If YES, avail								
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?						Yes		
Reference:			Schol	ars and i	researchers.			
4. The context of use for th				on or rare	3)	Rare		
Reference:		Histo	rical use, some ex	camples:	http://rovasirashonlap.fw.hu			
					e: http://rovas.info			
5. Are the proposed characters in current use by the user community?  Yes  If YES, where? Reference:								
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the RMP?								
iii uic divir!						No		

If YES, is a rationale provided?	
If YES, reference:	
<ul><li>7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?</li><li>8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?</li></ul>	Yes 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 an existing character?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided?	No
If YES, reference:	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	No
If YES, reference:	
12. Does the proposal contain characters with any special properties such as	
control function or similar semantics?	No
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility character(s)?	No
If YES, is the equivalent corresponding unified ideographic character(s) identified?	
If YES, reference:	