Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation Internationale de Normalisation
Международная организация по стандартизации

Contents

Abstract

Uygur script which is based on Aramaic alphabet is composed of phonetic characters. The script is written horizontally, from right to left and vertically, written from top to bottom. Character structure is composed of horizontally and vertically vowels, horizontally and vertically consonants, diacritics, punctuation symbols, digits, signature symbols, glyphs and ligatures. Beforehand, the Uygur character codes are not yet included in International standard ISO / IEC 10646 and Unicode. In the current study, the authors propose a design of Uygur alphabets, character code, glyph and ligatures.

1. Introduction

1.1 The origin and the family line of Uygur language

Uyghur people live Around Tangri 'heaven' Mountain range in Central Asia and Altai Mountain range. The Uyghur language belongs to the Altaic language family. Uygur (In Uygur character: يمدئڧر) is the name of the People. The Tangri Mountains was a part of the Uygur country. It is called the Uygur kingdom. The language of the Uygur kingdom is called the old Churuk language. The Uygur language consists of eight vowels: a --- æ, e --- i, o --- ö, u --- ü; and 24 consonants: b, p, t, ʤ, ʧ, x, d, r, z, ʒ, s, ʃ, ɣ, f, q, k, g, ŋ, l, m, n, h, v, y.

1.2 The origin and the system of a Uygur characters

Character used by Uygur people have changed over time, from Orkhon script in the ancient times to currently used Arabic script. Uygur script itself became completely extinct today. Uyghur script has been existent from 7nd century AD to 19th century AD in the Central Asia. The Uyghur script is derived from the Aramaic script. itself the forerunner of the Mongolian , Manchu (Sibe), Buryat and Kalmyk (Oirat) Script. In the 7th century AD, Turfan Uygur kingdom used the Uygur characters as the national character. Around 12th century AD, the Uygur alphabet was later used by the Kingdom of Mongolia. Influenced by the Islamic religion in the 15th century AD, Turfan Uygurs, and Mongols adopted the Arabic alphabet into Turfan Uyghur script.

1.3 The classification of characters

Today this Uyghur script is not used in written language. The Uyghur character, is written, horizontal writing from the right to left and vertical writing from top to bottom. Uyghur script basic set has 8 horizontal vowels letters and 8 vertical vowels letters, 24 horizontal consonant letters and 24 vertical consonant letters, diacritics, punctuation symbols, digits, signature symbols. As shown in the following definitions and abbreviations of these scripts; The vowel character is expressed "V", Horizontal Vowels characters "HV", Vertical Vowels characters "VV", Consonants "C", Horizontal Consonants characters "HC", Vertical Consonants characters "VC", Diacritic Marks "D", Punctuation Marks "P", Digits "I", Signature Symbols "J". (See table1)

Table1. Uyghur characters classification

Acronym	Name
V	Horizontal Vowels (HV)
V	Vertical Vowels (VV)
C	Horizontal Consonants (HC)
C	Vertical Consonants (VC)
D	Horizontal Diacritics Marks (HD)
D	Vertical Diacritics Marks (VD)
P	Horizontal Punctuation Marks (HP)
P	Vertical Punctuation Marks (VP)
I	Horizontal Digits (HD)

	Vertical Digits (VD)
J	Horizontal Signature Symbol (HJ)
	Vertical Signature Symbol (VJ)

2. Proposed character set

The Uygur character basic set has 8 vowels, 24 consonants letters, diacritics, punctuation symbols, digits, and signature symbols. If these signs are given, the syntactic structure of a Uygur character can be written. The following describes these character sets.

Vowels: These signs are given as 8 horizontal vowels "HV" and vertical vowels "VV", which follows the shape of vowel letters.

Uygur characters have 8 horizontal vowels "HV" and vertical vowels "VV":

HV (X000 … X007), VV (X090 … X097)

Consonants: These signs are given as 24 horizontal "HC" and vertical consonants "VC", which follows the shape of consonant letters.

Uygur characters have 24 horizontal and vertical consonants:

HC (X008 … X01F), VC (X098 … X0AF)

Diacritics: These signs are given as "D" and follow the shape of diacritics.

Horizontal and vertical Uygur characters have 74 Diacritic Marks:

HD (X020, X044) VD (X0B0, X0D4)

Punctuation symbols: These signs are given as "P" and follow the shape of punctuation symbols.

Horizontal and vertical Uygur characters have 32 punctuation symbols:

HP (X050 … X05F), VP (X0E0 … X0EF)

Digits: These signs are given as "I" and follow the shape of Digits.

Horizontal and vertical Uygur characters have 40 Digits:

HI (X060 … X079), VI (X0F0 … X109)

Signature symbols: Three Signature symbols "J" follow the shape of Signature symbols.

Horizontal and vertical Uygur characters have 30 Signature symbols:

HJ (X080 … XX08E), VJ (X110 … XX11E)

2.1 Classification of glyph

Uygur character is a descendant of the Aramaic alphabet, and inherited Semitic system characters. The same characters change shape depending on the position of the word. All vowel and consonant letters of Uygur characters have four display forms of initial (Left-joining glyph form), medial (Dual-joining glyph form), final (Right-joining glyph form) and isolated form (Nominal glyph form) [1].
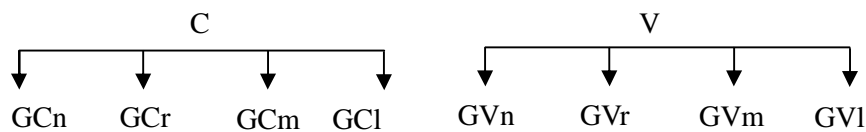

Figure1.   Implementation of the Uygur Glyph

Uygur character writing is similar to Arabic. Basic principles of international standards for character codes, which have established a "Separation of the glyph code [2], are different from a code table, were designed glyphs that correspond to each display form (Glyph, abstract figure in which type is shown) [3].

2.2 Proposed Uyghur Horizontally and Vertically Glyph Table

Uygur vowel glyphs: VG

Each vowel glyph has the following form and the following description is a record of the order of Latin characters from left to right. (See table6)

Uygur Horizontally vowel glyphs: HVG (0000-003D)

Uygur Vertically vowel glyphs: VVG (0100-003D)

Uygur consonants glyphs: CG (0140 … 01FF)

Each consonants glyph has the following form.

Uygur Horizontally consonants glyphs: HCG (003E-00CC)

Uygur Vertically consonants glyphs: VCG (013E-01CC)

Uygur vowel ligature: VL

Uygur Horizontally ligature: HL (00CF-00E9)

Uygur Vertically ligature: VL (01CF-01E9)

3. Reference Materials

Ancient Uyghur script has been in use over thousand years since 8th century AD to 18th century AD [4]. As writing styles and letter forms have changed over time, we need to focus our scope to specific time zone and to choose specific reference material. Authors choose "Kutadgu Bilig" (means "Wisdom of Royal Glory") written around 10th to 11th century. It was written in both ancient Uyghur script and in Arabic script. A part of the page, a horizontal and a vertical version, is shown in Fig 2. In addition to Kutadgu Bilig, two Buddhist documents [5][6] and one secular documents are also referred as a source of letter design, especially for punctuations, digits and signature symbols.

Figure 7. Uyghur Characters Vertically written from top to bottom (Kutadgu bilik 191page)
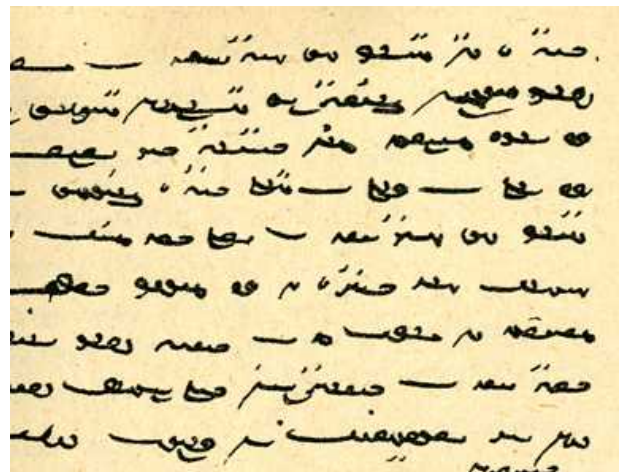
Figure 7.B Uyghur Characters Horizontally written from right to left (Kutadgu bilik 88page)

Figure2. Explanation of writing of Uyghur character

4. Proposed Uyghur Character Horizontally Code-Table

Table2. Proposed Uyghur Character Horizontally Code-Table

X000   Uygur   X08F

	X00	X01	X02	X03	X04	X05	X06	X07	X08
0	X000	X010	X020	X030	X040	X050	X060	X070	X080
1	X001	X011	X021	X031	X041	X051	X061	X071	X081
2	X002	X012	X022	X032	X042	X052	X062	X072	X082
3	X003	X013	X023	X033	X043	X053	X063	X073	X083
4	X004	X014	X024	X034	X044	X054	X064	X074	X084
5	X005	X015	X025	X035	X045	X055	X065	X075	X085
6	X006	X016	X026	X036	X046	X056	X066	X076	X086
7	X007	X017	X027	X037	X047	X057	X067	X077	X087
8	X008	X018	X028	X038	X048	X058	X068	X078	X088
9	X009	X019	X029	X039	X049	X059	X069	X079	X089
A	X00A	X01A	X02A	X03A	X04A	X05A	X06A	X07A	X08A
B	X00B	X01B	X02B	X03B	X04B	X05B	X06B	X07B	X08B
C	X00C	X01C	X02C	X03C	X04C	X05C	X06C	X07C	X08C
D	X00D	X01D	X02D	X03D	X04D	X05D	X06D	X07D	X08D
E	X00E	X01E	X02E	X03E	X04E	X05E	X06E	X07E	X08E
F	X00F	X01F	X02F	X03F	X04F	X05F	X06F	X07F	X08F

5

5. Proposed Uyghur Character Vertically Code-Table

Table3. Proposed Uyghur Character Vertically Code-Table

Uygur

	X09	X0A	X0B	X0C	X0D	X0E	X0F	X10	X11
0	X090	X0A0	X0B0	X0C0	X0D0	X0E0	X0F0	X100	X110
1	X091	X0A1	X0B1	X0C1	X0D1	X0E1	X0F1	X101	X111
2	X092	X0A2	X0B2	X0C2	X0D2	X0E2	X0F2	X102	X112
3	X093	X0A3	X0B3	X0C3	X0D3	X0E3	X0F3	X103	X113
4	X094	X0A4	X0B4	X0C4	X0D4	X0E4	X0F4	X104	X114
5	X095	X0A5	X0B5	X0C5	X0D5	X0E5	X0F5	X105	X115
6	X096	X0A6	X0B6	X0C6	X0D6	X0E6	X0F6	X106	X116
7	X097	X0A7	X0B7	X0C7	X0D7	X0E7	X0F7	X107	X117
8	X098	X0A8	X0B8	X0C8	X0D8	X0E8	X0F8	X108	X118
9	X099	X0A9	X0B9	X0C9	X0D9	X0E9	X0F9	X109	X119
A	X09A	X0AA	X0BA	X0CA	X0DA	X0EA	X0FA	X10A	X11A
B	X09B	X0AB	X0BB	X0CB	X0DB	X0EB	X0FB	X10B	X11B
C	X09C	X0AC	X0BC	X0CC	X0DC	X0EC	X0FC	X10C	X11C
D	X09D	X0AD	X0BD	X0CD	X0DD	X0ED	X0FD	X10D	X11D
E	X09E	X0AE	X0BE	X0CE	X0DE	X0EE	X0FE	X10E	X11E
F	X09F	X0AF	X0BF	X0CF	X0DF	X0EF	X0FF	X10F	X11F

Table4. Proposed Uyghur Horizontally Glyph -Table

0000	000	001	002	003	004	Uygur 005	006	007	008	009	00A	00AF
0	0000	0010	0020	0030	0040	0050	0060	0070	0080	0090	00A0	
1	0001	0011	0021	0031	0041	0051	0061	0071	0081	0091	00A1	
2	0002	0012	0022	0032	0042	0052	0062	0072	0082	0092	00A2	
3	0003	0013	0023	0033	0043	0053	0063	0073	0083	0093	00A3	
4	0004	0014	0024	0034	0044	0054	0064	0074	0084	0094	00A4	
5	0005	0015	0025	0035	0045	0055	0065	0075	0085	0095	00A5	
6	0006	0016	0026	0036	0046	0056	0066	0076	0086	0096	00A6	
7	0007	0017	0027	0037	0047	0057	0067	0077	0087	0097	00A7	
8	0008	0018	0028	0038	0048	0058	0068	0078	0088	0098	00A8	
9	0009	0019	0029	0039	0049	0059	0069	0079	0089	0099	00A9	
A	000A	001A	002A	003A	004A	005A	006A	007A	008A	009A	00AA	
B	000B	001B	002B	003B	004B	005B	006B	007B	008B	009B	00AB	
C	000C	001C	002C	003C	004C	005C	006C	007C	008C	009C	00AC	
D	000D	001D	002D	003D	004D	005D	006D	007D	008D	009D	00AD	
E	000E	001E	002E	003E	004E	005E	006E	007E	008E	009E	00AE	
F	000F	001F	002F	003F	004F	005F	006F	007F	008F	009F	00AF	

Table4. Uygur Horizontally Glyph Code Table

　Uygur　

	00B	00C	00D	00E	00F
0	00B0	00C0	00D0	00E0	00F0
1	00B1	00C1	00D1	00E1	00F1
2	00B2	00C2	00D2	00E2	00F2
3	00B3	00C3	00D3	00E3	00F3
4	00B4	00C4	00D4	00E4	00F4
5	00B5	00C5	00D5	00E5	00F5
6	00B6	00C6	00D6	00E6	00F6
7	00B7	00C7	00D7	00E7	00F7
8	00B8	00C8	00D8	00E8	00F8
9	00B9	00C9	00D9	00E9	00F9
A	00BA	00CA	00DA	00EA	00FA
B	00BB	00CB	00DB	00EB	00FB
C	00BC	00CC	00DC	00EC	00FC
D	00BD	00CD	00DD	00ED	00FD
E	00BE	00CE	00DE	00EE	00FE
F	00BF	00CF	00DF	00EF	00FF

7. Proposed Uyghur Vertically Glyph -Table

Table5. Proposed Uyghur Vertically Glyph -Table

Uygur

	010	011	012	013	014	015	016	017	018	019	01A
0	0100	0110	0120	0130	0140	0150	0160	0170	0180	0190	01A0
1	0101	0111	0121	0131	0141	0151	0161	0171	0181	0191	01A1
2	0102	0112	0122	0132	0142	0152	0162	0172	0182	0192	01A2
3	0103	0113	0123	0133	0143	0153	0163	0173	0183	0193	01A3
4	0104	0114	0124	0134	0144	0154	0164	0174	0184	0194	01A4
5	0105	0115	0125	0135	0145	0155	0165	0175	0185	0195	01A5
6	0106	0116	0126	0136	0146	0156	0166	0176	0186	0196	01A6
7	0107	0117	0127	0137	0147	0157	0167	0177	0187	0197	01A7
8	0108	0118	0128	0138	0148	0158	0168	0178	0188	0198	01A8
9	0109	0119	0129	0139	0149	0159	0169	0179	0189	0199	01A9
A	010A	011A	012A	013A	014A	015A	016A	017A	018A	019A	01AA
B	010B	011B	012B	013B	014B	015B	016B	017B	018B	019B	01AB
C	010C	011C	012C	013C	014C	015C	016C	017C	018C	019C	01AC
D	010D	011D	012D	013D	014D	015D	016D	017D	018D	019D	01AD
E	010E	011E	012E	013E	014E	015E	016E	017E	018E	019E	01AE
F	010F	011F	012F	013F	014F	015F	016F	017F	018F	019F	01AF

9

Table5. Uygur Vertically Glyph Code Table

	01B	01C	01D	01E	01F
0	01B0	01C0	01D0	01E0	01F0
1	01B1	01C1	01D1	01E1	01F1
2	01B2	01C2	01D2	01E2	01F2
3	01B3	01C3	01D3	01E3	01F3
4	01B4	01C4	01D4	01E4	01F4
5	01B5	01C5	01D5	01E5	01F5
6	01B6	01C6	01D6	01E6	01F6
7	01B7	01C7	01D7	01E7	01F7
8	01B8	01C8	01D8	01E8	01F8
9	01B9	01C9	01D9	01E9	01F9
A	01BA	01CA	01DA	01EA	01FA
B	01BB	01CB	01DB	01EB	01FB
C	01BC	01CC	01DC	01EC	01FC
D	01BD	01CD	01DD	01ED	01FD
E	01BE	01CE	01DE	01EE	01FE
F	01BF	01CF	01DF	01EF	01FF

01B0   Uygur   01FF

8. Uygur alphabet Vowels and Consonants

The Uygur character set are used in the later stage of the script history, around the 7th century AD to 19th century AD, consists of 32 letters, 8 vowel letters plus 24 consonant letters. As shown in table 6 there are 8 horizontally vowels letter and 8 vertically vowel letter of "/a/, /æ/, /e/, /i/, /o/, /ø/, /u/, /y/". are 24 horizontally consonants letter and 24 vertically consonants letter of "/b/, /p/, /t/, /dʒ/, /tʃ/, /x/, /d/, /r/, /z/, /ʒ /, /s/, /ʃ/, /ɣ/, /f/, /q/, /k/, /g/, /ŋ/, /l/, /m/, /n/, /h/, /v/, /j/".

Table6. Uygur alphabet

No	Vertically Character	Horizontally Character	Sound	Name	No	Vertically Character	Horizontally Character	Sound	Name
1	]	ـ	/a/	A	17	⌐	د	/z/	ZE
2	]ᴎ	ﺰ	/æ/	AH	18	⁆	⁼	/ʒ /	ZHEE
3	٦ᴎ	ﭺ	/e/	E	19	≈	ﻥ	/s/	SI
4	⊃	ں	/i/	I	20	٠:	ﭻ	/ʃ/	SHI
5	₫	ﻤ	/o/	O	21	⁚≈	ﻧ	/ɣ /	GHE
6	₫	ﻤ	/ø/	OV	22	·ۀ	ف	/f/	FI
7	ᴎ₫	ﻤ	/u/	U	23	:ۀ	ﺗ	/q/	KHI
8	ᴎ₫	ﻤ	/y/	UV	24	ر	ﮎ	/k/	KE
9	ﻭ	ﻭ	/b/	BE	25	ر	ﮑ	/g/	GE
10	ﻭ	ﻯ	/p/	PE	26	ﺯ	���︣	/ŋ/	NGI
11	ﻪ	ﺺ	/t/	TE	27	ﺾ	ﻊ	/l/	LE
12	﹏	ﺮ	/dʒ/	ZHE	28	ﻪ	ﻫ	/m/	ME
13	ﻪ	F	/tʃ/	CHE	29	·]	ﻨ	/n/	NE
14	ﺿ	ﻥ	/x/	HE	30	]۰	ﻮ	/h/	HHE
15	⊿	ﺩ	/d/	DE	31	₫	ﻤ	/v/	VE
16	ﺭ	ﻟ	/r/	RE	32	٦	ﺩ	/j/	YE

9. Uygur alphabet and glyph types

Table7. Alphabet and glyph

| No | Turfan Name | Vertically | | | | Horizontally | | | | Sound value |
		Xn	Xr	Xm	Xl	Xn	Xr	Xm	Xl	
1	A	ﻟ	ﻉ	ﻟ	]	ﻤ	ﺮ	ﻤ	ﻤ	/a/
2	AH	ﻟᴎ	ﻉᴎ	]ᴎ	]ᴎ	ﺰ	ﺰ	ﺰ	ﺰ	/æ/
3	E	٦ᴎ	٦ᴎ	٦ᴎ	٦ᴎ	ﭺ	ﭺ	ﭺ	ﭺ	/e/
4	I	ﻟ	ﻯ	ﻯ	۰	۰	ں	ﺩ	ﺩ	/i/
5	O	₫	₫	₫	₫	ﻤ	ﻤ	ﻤ	ﻤ	/o/
6	OV	₫	₫	₫	₫	ﻤ	ﻤ	ﻤ	ﻤ	/ø/

#	Name									IPA
7	U									/u/
8	UV									/y/
9	BE									/b/
10	PE									/p/
11	TE									/t/
12	ZHE									/ʤ/
13	CHE									/ʧ/
14	HE									/x/
15	DE									/d/
16	RE									/r/
17	ZE									/z/
18	ZHEE									/ /
19	SI									/s/
20	SHI									/ /
21	GHE									/ /
22	FI									/f/
23	KHI									/q/
24	KE									/k/
25	GE									/ /
26	NGI									/ /
27	LE									/l/
28	ME									/m/
29	NE									/n/
30	HHE									/h/
31	VE									/v/
32	YE									/j/

10. Bibliography

[1] The Unicode Standard Version 6.0.
[2] ISO/IEC TR 15285 An operational model for charac-ters and glyphs, First edition, 1998-12-15.
[3] Yoshiki Mikami, A History of character Codes in Asia, 2002.
[4] The Worlds Writing Systems, edited by P. Daniels, W. Bright, New York, Oxford University Press, 1996.
[5] Kutadgu Bilig, Istanbul, Alaeddin Kiral Basimeve, 1942.
[6] G. R. Rachmatl, Ergebnisse der Deutschen Turfan Forschung, 1936.

11. Appendix: Proposal Summary form

A. Administrative

1. **Title:**	*Proposal for encoding the Turfan Mani script in the SMP of the UCS*
2. Requester's name:	*Nagaoka University of Technology*
3. Requester type (Member body/Liaison/Individual contribution):	*Member body*
4. Submission date:	*2011-11-017*
5. Requester's reference (if applicable):	
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:	*Uygur script*
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:	
3. Proposed category (select one from below - see section 2.2 of P&P document):	

A-Contemporary ☐ B.1-Specialized (small collection) ☐ B.2-Specialized (large collection) ☐

C-Major extinct **C** 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 Mani (TrueType)	

---

related:

a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

Omarjan Osman

b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

Omerjan Osman, Information System and Control Engineering, Global Information Infrastructure Lab, Nagaoka University of Technology, Kamitomioka 1603-1, Nagaoka Shi, Niigata 940-2188, Japan, s075386@stn.nagaokaut.ac.jp

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*

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 http://www.unicode.org 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.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	*No*
If YES explain	

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?

Yoshiki Mikami

Global Information Infrastructure Lab

Nagaoka University of Technology

Kamitomioka 1603-1, Nagaoka Shi, Niigata 940-2188, Japan.

Tel: 090-1506-6595

mikami@kjs.nagaokaut.ac.jp

If   YES,   available   relevant   documents: *Yes*

3. Information on the user community for the proposed characters (for example:

size, demographics, information technology use, or publishing use) is included?   *Yes*

Reference: *Design of Uyghur Character Information Processing System. 2009.3*

4. The context of use for the proposed characters (type of use; common or rare)

Reference: *ISO/IEC JTC 1/SC 2/WG 2. 2008-10-23.*

5. Are the proposed characters in current use by the user community?

If YES, where?   Reference: *The objective of this paper is to create a standard character set for the Uygur script, in order to help in studies on those ancient documents. Users in Germany, in USA, in Japan.*

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely

In the BMP?   *No*

If YES, is a rationale provided?

If YES, reference:

7. Should the proposed characters be kept together in a contiguous range (rather than being   *Yes*

scattered)?

8. Can any of the proposed characters be considered a presentation form of an existing

Character or character sequence?   *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)   *No*

to an existing character?

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?   *No*

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:

12. Does the proposal contain characters with any special properties such as   *No*

Control function or similar semantics?

If YES, describe in detail (include attachment if necessary)

13. Does the proposal contain any Ideographic compatibility characters? *No*

If YES, are the equivalent corresponding unified ideographic characters identified?

If YES, reference: