

**ISO/IEC/JTC 1/SC2/WG2 N 4066**

2011-04-25 DATE

**Universal Multiple-Octet Coded Character Set (UCS) - ISO/IEC 10646**

Secretariat: ANSI

**TITLE:** PROPOSING TO SUPPLEMENT WITH THE SCRIPT AND  
CHARACTER OF Chaghatay Language **TO ISO/IEC**  
**10646**

**SOURCE:** CHINA  
**STATUS:** NATIONAL BODY POSITION  
**ACTION:** For consideration by JTC1/SC2/WG2  
**DISTRIBUTIO** ISO/IEC JTC1/SC2/WG2

**A. Administrative**

- 1 Title: PROPOSING TO SUPPLEMENT WITH THE SCRIPT AND  
CHARACTER OF **Chaghatay Script** TO ISO/IEC 10646
- 2 Requester's name: China
- 3 Requester type (Member body/Liaison/Individual contribution): Member Body
- 4 Submission date: 2011/05/13
- 5 Requester's reference (if applicable): No
- 6 Choose one of the following: This is a complete proposal: Yes or,
- 7 More information will be provided later: No

**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: **Chaghatay**
  - b. The proposal is for addition of character(s) to existing block: No  
Name of existing block:
2. Number of characters in proposal: 1
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 **X** ~~—~~D-Attested extinct \_\_\_\_\_ E-Minor  
extinct \_\_\_\_\_ F-Archaic Hieroglyphic or Ideographic \_\_\_\_\_ G-Obscure or

questionable usage symbols \_\_\_\_\_

4. Proposed Level of Implementation (1, 2 or 3) (see Annex K in P&P document):

\_\_\_ Is a rationale provided for the choice? No If Yes, reference:

5. 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

Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard? jpg files were provided by the Xinjiang University, China If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used: wushour@xju.edu.cn

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

8. 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)? No

2. 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 <http://www.unicode.org/Public/UNIDATA/UCD.html> 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?

(1)Xinjiang University;(2)Xinjiang Museam;(3)Xinjiang Language Community If YES, available relevant documents: The contract between Xinjiang University and Xinjisng Museam

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? [This is a very important character for study history, economic, culture and language of Chaghatay kingdom, Turkic kingdom and Uygur kingdom.](#)

Reference: [for example, Alsher.Nawayi \(1441-1501\), Sakaky \(XIV century\), Mahmut.Kshkary and other well-known experts, poets and scientists come out many books with the world influence in this language.](#)

4. The context of use for the proposed characters (type of use; common or rare): [people through Internet.](#)

Reference: [for example, Chaghatay alphabet ,](#)

5. Are the proposed characters in current use by the user community? [Yes](#) If YES, where? Reference: [for example, Xinjiang of China , Central Asia, Türkiye,](#)

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 scattered)? [Yes](#)

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) 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? [No](#) , If YES, is a rationale for its inclusion provided? 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:

## **D. Proposal**

### **PROPOSING TO SUPPLEMENT WITH THE SCRIPT AND CHARACTER OF Chaghatay Language TO ISO/IEC 10646**

Analysed and studied experience of the text input, display, search, print, and save of the Chagatai Language under the Windows 2000/XP environment, and detailly analysis and check the coded character of Arabic, Persian, Modern Uighur in the international standard 10646 (Unicode), and then We PROPOSING TO SUPPLEMENT WITH THE SCRIPT AND CHARACTER of Chaghatay Language **TO ISO/IEC 10646** .

#### **1. Introduction**

The peoples living in Xinjiang and Central Asia Usually speak language of Chagatai in XIV -XX century , It's generates based on the integration of Old Uyghur, Kashgar language and Kashi language. Chagatai language as the language is used in the official language for the era of Chagatai Kingdom, so it is called Chagatai language, and it also the common literary language used in the whole Turkish nation in Central Asia .

Chagatai language have a important role in the study and research of politics, economy, society and culture of Central Asia during the past six Centuries, For example Alsher.Nawayi (1441-1501), Sakaky (XIV century), Mahmut.Kshkary and other well-known experts, poets and scientists come out many books with the world influence in this language, there is great significance to study at that times, while some people are Communicating information in this language, So the draw up (10646) of international codes for Information Technology of Chagatai is very important.

Therefore , we propose Supplementary programs for Chagatai, and Look forward to the WG2 experts's consideration.

#### **2. Basic principles:**

**2.1** On the requirements of ISO 10646 basic principles, we only developed the Chagatai coded **character set** in the Nominal form , while recognized and located the Presentation form and bits of the Chagatai character set ,and determine the correspondence between base area and extend area for the Chagatai 10646 (Unicode).

**2.2** Respect for the shape and writing rules of the original material and the character of the Chagatai ,while respect for the orthography of original characters

**2.3** When the Nominal form and the Presentation form of the Chagatai characters are same with the characters of Arabic , Farsi, Urdu, and modern Uyghur, it should select same Unicode coding and bits.

such as: Table 1 The same shapes of characters in 0600 code area of 10646

Arabic or Uyghur	ى 0649	ه 06BE	أ 0672	ف 06A7
Chaghatay	ى 06CC	ه 0647	أ 0623	ف 0641

1) The pronunciation and basic applications of Chagatai characters ى in the literature are very similar to the Uighur character 0649, but the two Variants of this character are different from the Chagatai characters ى, but it in full compliance with the Persian character 06CC ى. So the code 06CC been identified and defined as the code of the Chagatai character ى.

2) The Chagatai characters ه is completely similar to the Arabic characters 06BE, but they do not show the same deformation in the form, while it is very similar to the modern Uighur character which it has the same 4 Variants in the form, so the code 0647 been identified and defined as the code of the Chagatai character ه.

3) Chagatai characters ف and 0641 characters show the same Variants in the form, and have the same processing rules of automatically selecting form, so the code 0641 was selected for code of the Chagatai character ف.

4) Character 0623 and character 0672 of Arabic have the same shape, for versatility, the Arabic character code 0623 is recognized as character code of Chagatai for information processing.

### 3. The coded character set of Chagatai in 10646 (Unicode) for the Information Technology

Chagatai alphabet consists of 33 letters, its 33 Nominal form and 118 Presentation forms will appear in the Annex (I). According to the shape of Chagatai characters and processing experience appearing in the classical literature, we confirmed and located the Nominal form of Chagatai and its code in 10646 (Unicode), it shows in Table 3 the Corresponding code of Nominal forms and the Presentation forms of the Chagatai characters in 10646 (Unicode) for the Information Technology shows in Table 4.

#### Terms and definitions

3.1 Repertoire: a specified set of characters which is expressed with coded characters set.

3.2 Coded character: the representations of Characters and their codes

3.3 Coded character set: a set of unambiguous rules which establish the Correspondence between a character set and their codes

3.4 Code table: a set of code which is used to represent Correspondence between a characters set and their code.

3.5 Applications: This coded character set of standard applies to the representation, transfer, exchange, processing, storage, input and display of the Chagatai characters for information technology.

N	Character Name	Nominal form
1	ا ARABIC LETTER ALEF	ا 0627
2	ب ARABIC LETTER BEH	ب 0628
3	پ ARABIC LETTER PEH • Persian, Urdu, ...	پ 067E
4	ت ARABIC LETTER TEH	ت 062A
5	ث ARABIC LETTER TEH	ث 062B
6	ج ARABIC LETTER JEEM	ج 062C
7	چ ARABIC LETTER TCHEH	چ 0686
8	ح ARABIC LETTER HAH	ح 062D
9	خ ARABIC LETTER KHAH	خ 062E
10	د ARABIC LETTER DAL	د 062F
11	ذ ARABIC LETTER THAL	ذ 0630
12	ر ARABIC LETTER REH	ر 0631

13	ز ARABIC LETTER ZAIN	ز 0632
14	ژ ARABIC LETTER JEH	ژ 0698
15	س ARABIC LETTER SEEN	س 0633
16	ش ARABIC LETTER SHEEN	ش 0634
17	ص ARABIC LETTER SAD	ص 0635
18	ض ARABIC LETTER DAD	ض 0636
19	ط ARABIC LETTER TAH	ط 0637
20	ظ ARABIC LETTER ZAH	ظ 0638
21	ع ARABIC LETTER AIN	ع 0639
22	غ ARABIC LETTER GHAIN	غ 063A
23	ف ARABIC LETTER FEH	ف 0641
24	ق ARABIC LETTER QAF	ق 0642

25	ك ARABIC LETTER KEHEH • Persian, Urdu, ...	ك 06A9
26	گ ARABIC LETTER GAF • Persian, Urdu, ...	گ 06AF
27	ل ARABIC LETTER LAM	ل 0644
28	م ARABIC LETTER MEEM	م 0645
29	ن ARABIC LETTER NOON	ن 0646
30	و ARABIC LETTER WAW	و 0648
31	ه ARABIC LETTER HEH	ه 0647
32	ی ARABIC LETTER FARSI YEH	ی 06CC
33	<b>CHAGHATAY LETTER NG (Supplement)</b>	نگ 05F6

#### 4. NEEDS TO SUPPLEMENT WITH THE SCRIPT AND CHARACTER OF Chaghatay Language TO ISO/IEC 10646

There's nothing similar character of the Chagatai character's N33نگ in the code table ISO 10646 (Unicode). Therefore, we apply for the additional characters and their codes to the ISO 10646 WG2 . Applied Chaghatay letter NG is consists of the following four variations , such as the **Initial form**, **Medial form**, **Final form** and **Isolated form**, as shown in table 2



	Nominal form	Initial form	Medial form	Final form	Isolated form
CHAGHATAY LETTER Form NG	نک	نک	نک	نک	نک
The Suggested code points	05F6	FBD1	FBD2	FBD0	FBCF

We Suggested code point s for nominal forms of CHAGHATAY LETTER have to be in **05XX 05F6** ( may be arrange in other code points ) , as shown in Table 3

# Hebrew

	059	05A	05B	05C	05D	05E	05F
0		 05A0	 05B0	 05C0	 05D0	 05E0	 05F0
1	 0591	 05A1	 05B1	 05C1	 05D1	 05E1	 05F1
2	 0592	 05A2	 05B2	 05C2	 05D2	 05E2	 05F2
3	 0593	 05A3	 05B3	 05C3	 05D3	 05E3	 05F3
4	 0594	 05A4	 05B4	 05C4	 05D4	 05E4	 05F4
5	 0595	 05A5	 05B5	 05C5	 05D5	 05E5	
6	 0596	 05A6	 05B6	 05C6	 05D6	 05E6	 05F6
7	 0597	 05A7	 05B7	 05C7	 05D7	 05E7	
8	 0598	 05A8	 05B8		 05D8	 05E8	
9	 0599	 05A9	 05B9		 05D9	 05E9	
A	 059A	 05AA	 05BA		 05DA	 05EA	
B	 059B	 05AB	 05BB		 05DB		
C	 059C	 05AC	 05BC		 05DC		
D	 059D	 05AD	 05BD		 05DD		
E	 059E	 05AE	 05BE		 05DE		
E	 059E	 05AE	 05BE		 05DE		
F	 059F	 05AF	 05BF		 05DF		

Table 4. Presentation forms of the Chagatai characters in 10646 (Unicode)

ExtendedCode **FBCF-FBD2**

FB50 Arabic Presentation Forms-A FC3F

	FB5	FB6	FB7	FB8	FB9	FBA	FBB	FBC	FBD	FBE	FBF	FC0	FC1	FC2	FC3
0	ا FB50	ن FB60	ق FB70	چ FB80	ک FB90	ن FBA0	ئ FBB0	ط FBC0	نک FBD0	و FBE0	ئو FBF0	ئنج FC00	تی FC10	کھ FC20	فم FC30
1	آ FB51	ن FB61	ق FB71	چ FB81	ک FB91	ن FBA1	ئ FBB1	ط FBC1	نک FBD1	و FBE1	ئو FBF1	ئنج FC01	تی FC11	کھ FC21	فم FC31
2	پ FB52	ش FB62	چ FB72	د FB82	گ FB92	ط FBA2	۰ FBB2		نک FBD2	و FBE2	ئو FBF2	م FC02	شم FC12	نخ FC22	فپ FC32
3	پ FB53	ش FB63	چ FB73	د FB83	گ FB93	ط FBA3	۰ FBB3		نک FBD3	و FBE3	ئو FBF3	م FC03	شم FC13	نخ FC23	فپ FC33
4	پ FB54	ش FB64	چ FB74	د FB84	گ FB94	ه FBA4	۰ FBB4		نک FBD4	پ FBE4	ئو FBF4	ئنج FC04	تی FC14	نخ FC24	فم FC34
5	پ FB55	ش FB65	چ FB75	د FB85	گ FB95	ه FBA5	۰ FBB5		نک FBD5	پ FBE5	ئو FBF5	ئنج FC05	تی FC15	نخ FC25	فم FC35
6	پ FB56	ش FB66	چ FB76	د FB86	گ FB96	ه FBA6	۰ FBB6		نک FBD6	پ FBE6	ئو FBF6	ئنج FC06	تی FC16	نخ FC26	فپ FC36
7	پ FB57	ش FB67	چ FB77	د FB87	گ FB97	ه FBA7	۰ FBB7		نک FBD7	پ FBE7	ئو FBF7	ئنج FC07	تی FC17	نخ FC27	ک FC37
8	پ FB58	ش FB68	چ FB78	د FB88	گ FB98	ه FBA8	۰ FBB8		نک FBD8	پ FBE8	ئو FBF8	ئنج FC08	تی FC18	نخ FC28	نک FC38
9	پ FB59	ش FB69	چ FB79	د FB89	گ FB99	ه FBA9	۰ FBB9		نک FBD9	پ FBE9	ئو FBF9	ئنج FC09	تی FC19	نخ FC29	نک FC39
A	پ FB5A	ش FB6A	چ FB7A	د FB8A	گ FB9A	ه FBAa	۰ FBBa		نک FBDa	پ FBEa	ئو FBFa	ئنج FC0a	تی FC1a	نخ FC2a	نک FC3a
B	پ FB5B	ش FB6B	چ FB7B	د FB8B	گ FB9B	ه FBAb	۰ FBBb		نک FBDb	پ FBEb	ئو FBFb	ئنج FC0b	تی FC1b	نخ FC2b	ک FC3b
C	پ FB5C	ش FB6C	چ FB7C	د FB8C	گ FB9C	ه FBAc	۰ FBBc		نک FBDc	پ FBEc	ئو FBFc	ئنج FC0c	تی FC1c	نخ FC2c	ک FC3c
D	پ FB5D	ش FB6D	چ FB7D	د FB8D	گ FB9D	ه FBAd	۰ FBBd		نک FBDd	پ FBEd	ئو FBFd	ئنج FC0d	تی FC1d	نخ FC2d	ک FC3d
E	ن FB5E	ق FB6E	چ FB7E	ک FB8E	ن FB9E	ئ FBAE	۰ FBBE		نک FBD E	و FBE E	ئو FBF E	ئنج FC0 E	تی FC1 E	نخ FC2 E	ک FC3 E
F	ن FB5F	ق FB6F	چ FB7F	ک FB8F	ن FB9F	ئ FBAF	۰ FBBF	نک FBCF	نک FBD F	و FBE F	ئو FBF F	ئنج FC0 F	تی FC1 F	نخ FC2 F	ک FC3 F

Table 5. The Corresponding code of Nominal forms and the Presentation forms of the Chagatay characters in 10646 (Unicode) for the Information Technology

N	Character Name	Nominal form	Isolated form	Initial form	Medial form	Final form
1	ا ARABIC LETTER ALEF	ا 0627	ا FE8D			ا FE8E
2	ب ARABIC LETTER BEH	ب 0628	ب FE8F	ب FE91	ب FE92	ب FE90
3	پ ARABIC LETTER PEH • Persian, Urdu, ...	پ 067E	پ FB56	پ FB58	پ FB59	پ FB57
4	ت ARABIC LETTER TEH	ت 062A	ت FE95	ت FE97	ت FE98	ت FE96
5	ث ARABIC LETTER TEH	ث 062B	ث FE99	ث FE9B	ث FE9C	ث FE9A
6	ج ARABIC LETTER JEEM	ج 062C	ج FE9D	ج FE9F	ج FEA0	ج FE9E
7	چ ARABIC LETTER TCHEH	چ 0686	چ FB7A	چ FB7C	چ FB7D	چ FB7B
8	ح ARABIC LETTER HAH	ح 062D	ح FEA1	ح FEA3	ح FEA4	ح FEA2
9	خ ARABIC LETTER KHAH	خ 062E	خ FEA5	خ FEA7	خ FEA8	خ FEA6
10	د ARABIC LETTER DAL	د 062F	د FEA9			د FEAA

11	ذ ARABIC LETTER THAL	ذ 0630	ذ FEAB			ذ FEAC
12	ر ARABIC LETTER REH	ر 0631	ر FEAD			ر FEAE
13	ز ARABIC LETTER ZAIN	ز 0632	ز FEAF			ز FEB0
14	ژ ARABIC LETTER JEH	ژ 0698	ژ FB8A			ژ FB8B
15	س ARABIC LETTER SEEN	س 0633	س FEB1	س FEB3	س FEB4	س FEB2
16	ش ARABIC LETTER SHEEN	ش 0634	ش FEB5	ش FEB7	ش FEB8	ش FFP6
17	ص ARABIC LETTER SAD	ص 0635	ص FEB9	ص FEBB	ص FEBC	ص FEBA
18	ض ARABIC LETTER DAD	ض 0636	ض FEBD	ض FEBF	ض FEC0	ض FEBE
19	ط ARABIC LETTER TAH	ط 0637	ط FEC1	ط FEC3	ط FEC4	ط FEC2
20	ظ ARABIC LETTER ZAH	ظ 0638	ظ FEC5	ظ FEC7	ظ FEC8	ظ FEC6

21	ع ARABIC LETTER AIN	ع 0639	ع FEC9	ع FECB	ع FECC	ع FECA
22	غ ARABIC LETTER GHAIN	غ 063A	غ FECD	غ FECF	غ FED0	غ FECE
23	ف ARABIC LETTER FEH	ف 0641	ف FED1	ف FED3	ف FED4	ف FED2
24	ق ARABIC LETTER QAF	ق 0642	ق FED5	ق FED7	ق FED8	ق FED6
25	ك ARABIC LETTER KEHEH • Persian, Urdu, ...	ك 06A9	ك FB8E	ك FB90	ك FB91	ك FR8F
26	گ ARABIC LETTER GAF • Persian, Urdu, ...	گ 06AF	گ FB92	گ FB94	گ FB93	گ FB95
27	ل ARABIC LETTER LAM	ل 0644	ل FEDD	ل FEDF	ل FEE0	ل FEDE
28	م ARABIC LETTER MEEM	م 0645	م FEE1	م FEE3	م FEE4	م FEE2
29	ن ARABIC LETTER NOON	ن 0646	ن FEE5	ن FEE7	ن FEE8	ن FEE6
30	و ARABIC LETTER WAW	و 0648	و FEED			و FEEE

31	هـ ARABIC LETTER HEH	ه 0647	ه FEE9	ه FEEB	ه FEEC	ه FEEA
32	ی ARABIC LETTER FARSI YE	ی 06CC	ی FBFC	ی FBFE	ی FBFF	ی FBFD
33	نک Chaghatay letter NG (SUPPLEMENT)	نک 05F6	نک FBCF	نک FBD1	نک FBD2	نک FBD0

## 5. The example for additional characters

### The Annex (I): Alphabet of Chaghatay Language

3) چاغاتاي ئۇيغۇر يېزىقىنىڭ ئېلىپبە جەدۋىلى (باسما شەكلى)						
No	ھەرپ نامى	باش شەكلى	ئوتتۇرا شەكلى	ئاياغ شەكلى	يالغۇز شەكلى	ئىپادە قىلىدىغان تاۋۇش
1	ئەلىق	ا	ا	ا	ا	a ā o u i
2	بە	ب	ب	ب	ب	b/p
3	پە	پ	پ	پ	پ	p
4	تە	ت	ت	ت	ت	t
5	سە	ث	ث	ث	ث	s (س)
6	جىم	ج	ج	ج	ج	j/ch
7	چىم	چ	چ	چ	چ	ch
8	ھە	ح	ح	ح	ح	h (ھ)
9	خە	خ	خ	خ	خ	x
10	دال	د	د	د	د	d
11	زال	ذ	ذ	ذ	ذ	z (ز)
12	رە	ر	ر	ر	ر	r
13	زە	ز	ز	ز	ز	z
14	ژە	ژ	ژ	ژ	ژ	zh
15	سىن	س	س	س	س	s
16	شىن	ش	ش	ش	ش	sh
17	سات	ص	ص	ص	ص	s (س)



18	زات	ض	ض	ض	ض	z (ز)
19	ئىتقى	ط	ط	ط	ط	t (ت)
20	ئىزغى	ظ	ظ	ظ	ظ	z (ز)
21	ئەين	ع	ع	ع	ع	' (ئ)
22	غەين	غ	غ	غ	غ	gh
23	فە	ف	ف	ف	ف	f
24	قاف	ق	ق	ق	ق	q
25	كاف	ك	ك	ك	ك	k/g
26	گاف	گ	گ	گ	گ	g
27	لام	ل	ل	ل	ل	l
28	مەم	م	م	م	م	m
29	نۇن	ن	ن	ن	ن	n
30	ۋاۋ	و	و	و	و	o u ö ü w
31	ھا	ھ	ھ	ھ	ھ	h/ä
32	يا	ي	ي	ي	ي	a e i i y y
33	ئى	ئى	ئى	ئى	ئى	ng ng'g
	ھەمزە	ء	ء	ء	ء	' (ئ)
	ۋاۋ ئەلىق	او	او	او	او	ouöü ئو ئو ئو ئو
	يا ئەلىق	اي	اي	اي	اي	e i ay äy (ئى ئى)

The Annex (II):

1. The example of Chahgatay Letter نك using in Words

(9) «نك» [ng] ھەرىپى. بۇ تاۋۇش چاغاتاي ئۇيغۇر يېزىقىدا «ن» بىلەن «ك» نىڭ قوشۇلمىسى «نك» شەكلىدە ئىپادىلىنىدۇ. مەسلەن:

[yaling]	يالينك	[munglugh]	مونكلوغ
[köngül]	كونكول	[gul räng]	كلرنك

كونكولم اورتىنىڭ غەيرىنىڭ كاپروا ايللاسا  
 ھەكشى وھلىن تىنا ايللاسا انومىدا اوللا  
 اوزكالا حسننى تاشا ايللاسا مچىسو  
 غەيرىنىڭ اشكارا قىلىپ لال اولدۇ تىلىم قايىسى بىر تىل ھەم كەز كەزنىڭ اشكارا ايللاسا

[Könglüm örtänsun ägär ghäyringgä pärwa äyläsä, Här köngül hämkim säning ishqingni pida äyläsä. Här kishi wäslin tämänna äyläsäm näwmid öläy, Här kishi hämkim säning wäsling tämänna äyläsä. özgälär husnin tämasha äyläsäm chiqsun közüm, Özgäbir köz hämki husnungni tämasha äyläsä. Ghäyr zikrin ashkara qilsä lal olsun tilim, Qaysi bir til hämki zikring ashkara äyläsä.]

—Nāwai.

كونكول تىنما ساقا قالدى كوندە يۈزمىنىڭ آرزۇ بىلە  
 وصيت قىلدى قەبرىم تاشىدا فەرھاد ايلە مجنون  
 رضا كويغىغا تاقويدوم قەدىم كۆنگۈلنى تىندۈردۈم  
 جنون صحرا سىدا اول تاشلار كۆكسىمە اوردۇم

[Köngül tinmasaqa qaldi kündä yüzming arzu birlä, Riza koyigha ta qoydum qädäm könglümni tindurdum. Wasiyät qildi qäbrim tashida färhad ilä mäjnun, Junun sährasida ol tashlarni köksimä urdum.]

—Muhämmädsadiq Kashghäri.

(6) «مىنگا» [ming] ، «يوزمىنگا» [yüzming] ، «يوزتمىن» [yüztümän] ، «تىن» [tün] ، «مىنگا» [tümänming] ، «يوزتمىن مىنگا» [yüz tümän ming] قاتارلىق تاق ۋە قوشما سانلار نەزمىي ئەسەرلەردە كۆپىنچە سان مەنىسىدە ئەمەس ، بەلكى «ناھايتى ، كۆپ ، ساناقسىز ، ھېسابسىز» دېگەندەك مەنىلەردە قوللىنىلغان . مەسىلەن :

— نوائى .

△ يوزتمىن برق بلا اوردونگا مىنگا

[yüz tümän bärqi bāla urdung manga.]

(ماڭا ناھايتى نۇرغۇن بالا - قازانگا چاقمىقنى چۈشۈردۈڭ .)

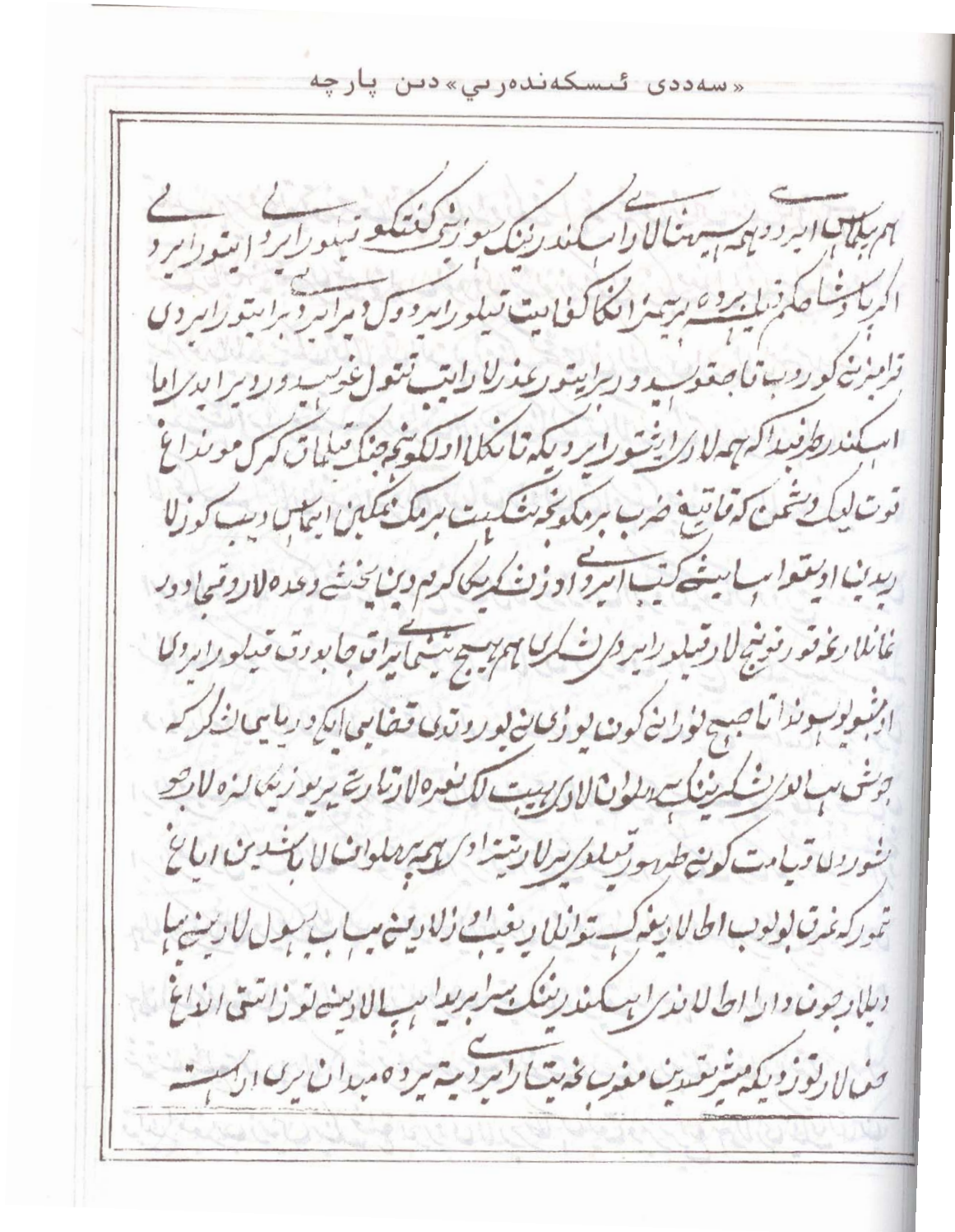
△ يوز تىن مىنگا قايغۇدىن بىر يولى ازاد ايلاكىل

[yüz tümänming qayghudin bir yoli azad äylägil.]

— موللا بىلال .

(ساناقسىز قايغۇلاردىن بىر يولى ئازاد قىلغىن .)

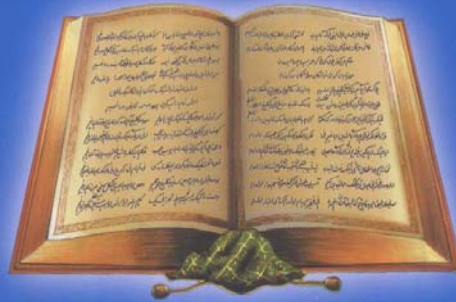
2. The Block of "Saeddy Iskaender" , Navayi , The Year 1260



3. a Course Booke of Chagatay language (Publication of Xinjiang University, 07.2009 Year)

ئابلېمىت ئەھەت بۆگۈ

# چاغاتاي ئۇيغۇرتىلى



شىنجاڭ ئۇنىۋېرسىتېتى نەشرىياتى

## The Annex (III): The design and development of the Chahgatay keyboard layout

### The design requirements and layout of the Chahgatay

There are no any text corpus and frequency data about Chagatay language which can be referenced current, Therefore, we referenced to the keyboard of the Arabic, Persian and modern Uighur when we developed the layout of the Chagatai keyboard ,and Propose the following design requirements.

1) Chagatai language mainly uses the figures of original Arabic text , so the original Arabic numbers should be arranged to normal states.

2) There are little pepole to enter Chagatai text, and they usually use the modern Uighur keyboard. Therefore, we taked the modern Uighur keyboard as a template, and keep keyboard position of the same character of the Chagatai and the modern Uighur is still consistent.

3) The Chagatai Characters which don't exist in the modern Uighur should be arranged in the position easily remembered by pepole according to pronunciation and shape of Characters.

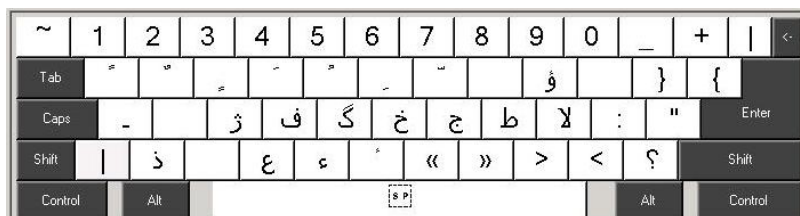
4) When entering these words from the Qur'an and other religious literature quotations, the various symbols are basically consistent with the Arabic keyboard

5) The complex letters of Chagatai language should be entered as once as possible by using the Single button.

The final keyboard layout of the Chagatai as shown in the following figure(1) and (2) according to the above design.



figure(1) the Base state of Chahgatay keyboard



figure(2) the shift state of Chahgatay keyboard