ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO/IEC JTC 1/SC 2/WG 2

Universal Multiple-Octet Coded Character Set (UCS)

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Title:

Draft on encoding Mongolian Character Set

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To be discussed in WG2

Distribution:

ISO/IEC JTC 1/SC2/WG2, ISO/IEC JTC1/SC 2 and

Organizations

The Mongolian encoding meeting was held from August 1st to 5th in Beijing.

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status

experts from China, 2 experts from Mongolia (Mr.Chilkhassuren and Ms.Erdenchimeg) and an expert from Unites Nation University (Mr.O.Corff) participated the meeting. For details, please refer to Report of Third International Mongolian Encoding Meeting.

The attached files are:

Mongolian Character Encoding Conventions

Mongolian Basic Character Set

Names of Mongolian Basic Characters

The Usage of the Peculiar Symbols and the Control Symbols of Mongolian, Todo, Sibe, Manchu Scripts.

The above files have been agreed upon during the Beijing Mongolian encoding meeting.

Since the Reference Table as a part of the whole draft (an all information table including the presentation form mapping table about 40 pages, please refer to the report of the Beijing Mongolian Meeting) has not been completed, Mongolian delegation suggest not to distribute any parts of the draft in Quebec WG2 meeting. China believe that it is our responsibility to report to the other G2 members especially those interested in Mongolian encoding the current

of and detailed result of this meeting. Communication especially off line is necessary anywhere and anytime.

Since China and Mongolia distributed the Joint proposal on encoding Mongolian in Denmark, no feedback and comments have been received. We hope the other interested WG2 members may play a more active role and catch up the pace.

Any number refered in the Report of Third International Mongolian Encoding Meeting is the same as in the attached files.

Mongolian Character Encoding Conventions

1. The Mongolian script character set is a coding proposal of Mongolian scripts which includes Mongolian letters, Todo letters, Sibe letters, Manchu letters, Ali Gali (letters used for the transcription of Tibetan and Sanskrit), punctuation marks, digits and control characters. The written languages Todo, Sibe and Manchu all share Mongolian letters.

This proposal only encodes canonical characters. Ligatures which are logically larger than one character unit and graphemes which are logically smaller than one character unit are excluded.

- 2. The encoding is given in the sequence
 - punctuation marks
 - digits
 - letters
 - control codes.

The letters comprise Mongolian letters, Mongolian Todo letters, Mongolian Sibe letters, Mongolian Manchu letters and Ali Gali letters.

Most Mongolian, Todo, Sibe and Manchu characters have three forms according to their position in the word being either initial, medial or final. Due to additional variation, there can be more than ten presentation form variants for a given letter.

According to the relevant principles of ISO/IEC 10646, only one of those presentation forms is to be encoded. This form will be named "basic character". For the vowels, their isolated forms are adopted. As a rule, only the presentation form appearing before the vowel "A" will be adopted for the consonants. All other forms are classified as "presentation forms". Some characters of different scripts have the same shape as the canonical character or the initial form but different shapes when being used in medial or final position. As an exception to the previous rule, in order to differentiate between the character in different scripts, different forms are adopted as basic characters. For example, the middle form of the character ANG in Mongolian, Todo, Sibe and Manchu is w, its final form is m in Mongolian, min Todo, m in Sibe and m in Manchu (as in

Mongolian). In order to emphasize this difference, the medial form r_0 is chosen as basic character for Mongolian and Manchu, the final form r_0 is chosen for Todo and the final form r_0 is chosen for Sibe. This exceptional treatment covers the following Todo, Sibe and Manchu letters: r_0 (TODO BA), r_0 (TODO MA), r_0 (TODO TSA), r_0 (TODO TSA), r_0 (SIBE E), r_0 (SIBE I), r_0 (SIBE U), r_0 (SIBE KA), r_0 (SIBERA), r_0 (SIBE FA), r_0 (SIBE TA), r_0 (SIBE DA) r_0 (MANCHU I), r_0 (MANCHU KA) and r_0 (MANCHU FA).

- 3. Four characters require special treatment. The two Mongolian character pairs O and U as well as OE and UE have almost the same shape both as basic characters and in their presentation forms. However, in Mongolian, these four characters are independent and have different meanings despite their identical form. For example, 60 (BODO) means "think", 60 (BUDU) means "dye", 1000 (OEGELEHUE) means "trim" and 1000 (UEGELEHUE) means "appeal". These words are distinguished by the difference of the four vowels O, U, OE, and UE. Thus, in the Basic Character Set, the four vowels are encoded as to (isolated form of O), to (initial form of U), to (isolated form of OE), and to (initial form of UE). In this way, the problems specific to Mongolian vowels are settled and accordance with ISO/IEC 10646 is achieved.
- 4. The basic characters of Mongolian, Todo, Sibe and Manchu are unified according to their shapes. The names of the unified characters are listed in the order of Mongolian, Tod, Sibe and Manchu; the name of the first representative in this list is taken as character name.

Letters only used in Mongolian and letters commonly used in the other scripts share the common name prefix MONGOLIAN LETTER. The names of letters exclusively used in Todo are prefixed by MONGOLIAN LETTER TODO. The names of letters exclusively used in Sibe are prefixed by MONGOLIAN LETTER SIBE. The names of letters exclusively used in Manchu are prefixed by MONGOLIAN LETTER MANCHU. The Ali Gali letters of Mongolian, Todo and Manchu are prefixed by MONGOLIAN LETTER AG, MONGOLIAN LETTER TODO AG, and MONGOLIAN LETTER MANCHU AG, respectively.

- 5. The unified forms of the basic characters of the four scripts and their respective name variants are recorded in the "Mongolian Reference Table".
- 6. The unified basic characters are arranged in the order of Mongolian, Tode, Sibe, Manchu and Ali Gali characters.
- 7. In the majority of cases, the presentation forms of all four scripts can be determined by their position and other constraints. However, there is a very small number of cases where the proper form cannot be distinguished by word—internal constraints alone. Therefore, three control codes are introduced: MONGO-LIAN FIRST IDENTIFIER (172), MONGOLIAN SECOND IDENTIFIER (173) and MONGOLIAN POSITIONAL SELECTOR (174). If the joiner and non—joiner symbols of ISO 10464 can be redefined for Mongolian purposes, then these two symbols can be used as first and second identifiers. The usage of the control codes is explained in the separate document "The Usage of Identifier and Selector Symbols in Mongolian Writing".
- 8. The presentation form set of Mongolian, Todo, Sibe, and Manchu as well as Ali Gali is listed in the separate Mongolian Reference Table.

Mongolian Basic Character Set

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NAMES OF MONGOLIAN BASIC CHARACTERS

	T			1	
dec	hex	Name	dec	hex	Name
000	00	MONGOLIAN SPACE	064		MONGOLIAN LETTER LHA
001	01	MONGOLIAN BIRGA	065	41	MONGOLIAN LEITER ZHI
002	02	MONGOLIAN ELLIPSIS	066	42	MONGOLIAN LETTER CHI
003	03	MONGOLIAN COMMA	067	43	MONGOLIAN LETTER TODO LONG VOWEL SIGN
004	04	MONGOLIAN PERIOD	068	44	MONGOLIAN LETTER TODO E
005	06	MONGOLIAN HORIZONTAL COLON MONGOLIAN FOUR DOTS	-070	46	MONGOLIAN LETTER TODO I MONGOLIAN LETTER TODO O
007	07	MONGOLIAN COMBINATION SYMBOL	071	47	MONGOLIAN LETTER TODO U
008	08	MONGOLIAN TODO SOFT HYPHEN	072	48	MONGOLIAN LETTER TODO OE
009	09	MONGOLIAN SIBE SYLLABLE BOUNDARY MARKER	073	49	MONGOLIAN LETTER TODO UE
010	QA.	MONGOLIAN MANCHU COMMA	074	44	MONGOLIAN LETTER TODO ANG
011	0B	MONGOLIAN MANCHU PERIOD	075	4B	MONGOLIAN LETTER TODO BA
012	0C	MONGOLIAN NIRUGU	076	4C	MONGOLIAN LETTER TODO PA
013	OD	(THIS POSITION SHALL NOT BE USED)	077		MONGOLIAN LETTER TODO QA
014	0E	(THIS POSITION SHALL NOT BE USED)	078	4E	MONGOLIAN LETTER TODO GA
015	OF	(THIS POSITION SHALL NOT BE USED)	079	4F	MONGOLIAN LETTER TODO MA
016	10	MONGOLIAN DIGIT ZERO	080	50	MONGOLIAN LETTER TODO:TA
017	11	MONGOLIAN DIGIT ONE	081	51	MONGOLIAN LETTER TODO DA
018	12	MONGOLIAN DIGIT TWO	082	52	MONGOLIAN LETTER TODO CHA MONGOLIAN-LETTER TODO JA
019	13 14	MONGOLIAN DIGIT THREE MONGOLIAN DIGIT FOUR	083 084	53 54	
021	15	MONGOLIAN DIGIT FIVE	085	55	MONGOLIAN LETTER TODO YA
022	16	MONGOLIAN DIGIT SIX	086	56	MONGOLIAN LETTER TODO WA
023	17	MONGOLIAN DIGIT SEVEN	087	57	MONGOLIAN LETTER TODO KA
024	18	MONGOLIAN DIGIT EIGHT	088	58	
025	19	MONGOLIAN DIGIT NINE	089	59	MONGOLIAN LETTER TODO HAA
026	IA	(THIS POSITION SHALL NOT BE USED)	090	5A	MONGOLIAN LETTER TODO JIA
027	1B	(THIS POSITION SHALL NOT BE USED)	091	58	MONGOLIAN LETTER TODO NIA
028	1C	(THIS POSITION SHALL NOT BE USED)	092	5C	Mongolian Letter Todo Dza
029	1D	(THIS POSITION SHALL NOT BE USED)	093	50	Mongolian Letter Xibe e
030	1E	(THIS POSITION SHALL NOT BE USED)	094		MONGOLIAN LETTER XIBE I
031	1F	(THIS POSITION SHALL NOT BE USED)	095	5F	MONGOLIAN LETTER XIBE IY
032	20	MONGOLIAN LETTER A MONGOLIAN LETTER E	096 097	60 61	MONGOLIAN LETTER XIBE UE MONGOLIAN LETTER XIBE U
033	21 22	MONGOLIAN LETTER I	098	62	
035	23	MONGOLIAN LETTER O	099	63	MONGOLIAN LETTER XIBE KA
036	24	MONGOLIAN LETTER U	100	64	MONGOLIAN LETTER XIBE GA
037	25	MONGOLIAN LETTER OE	101	65	MONGOLIAN LETTER XIBE QA
038	26	MONGOLIAN LETTER UE	102	66	MONGOLIAN LETTER XIBE PA
039	27	mongolian letter ee	103	67	MONGOLIAN LETTER XIBE SHA
040	28	mongolian letter na	104	68	MONGOLIAN LETTER XIBE TA
041	29	mongolian letter ang	105	69	MONGOLIAN LETTER XIBE DA
042	2A	MONGOLIAN LETTER BA	106	6A	MONGOLIAN LETTER XIBE JA
043	28	MONGOLIAN LETTER PA	107	6B	MONGOLIAN LETTER XIBE FA
044	2C	MONGOLIAN LETTER QA	108	60	MONGOLIAN LETTER XIBE GAA
045		MONGOLIAN LETTER MA	109	60	MONGOLIAN LETTER XIBE HAA
046	1 :	MONGOLIAN LETTER MA MONGOLIAN LETTER LA	110		MONGOLIAN LETTER XIBE TSA
047	1 1	MONGOLIAN LETTER LA MONGOLIAN LETTER SA	1112		MONGOLIAN LETTER XIBE ZA MONGOLIAN LETTER XIBE RAA
048	1 .	MONGOLIAN LETTER SA MONGOLIAN LETTER SHA	112	1	MONGOLIAN LETTER XIBE CHA
050		MONGOLIAN LETTER SAA	114		MONGOLIAN LETTER XIBE ZHA
051	1	MONGOLIAN LETTER DA	115	Ι.	MONGOLIAN LETTER MANGHU I
052		MONGOLIAN LETTER CHA	116		MONGOLIAN LETTER MANGHU KA
053		mongolian letter ja	117	75	MONGOLIAN LETTER MANCHU RA
054	1	MONGOLIAN LETTER YA	118	76	MONGOLIAN LETTER MANGHU FA
055	37	MONGOLIAN LETTER RA	119	77	MONGOLIAN LETTER MANGHU ZHA
056	38	MONGOLIAN LETTER WA	120	78	(THIS POSITION SHALL NOT BE USED)
057	39	Mongolian Letter fa	121	79	(THIS POSITION SHALL NOT BE USED)
058	1	MONGOLIAN LETTER KA	122	1	1
059		MONGOLIAN LETTER KHA	123	1	(THIS POSITION SHALL NOT BE USED)
060	1	MONGOLIAN LETTER TSA	124	7C	
061	1 .	MONGOLIAN LETTER ZA	125	1	(THIS POSITION SHALL NOT BE USED)
062	1	MONGOLIAN LETTER HAA	126	1	(THIS POSITION SHALL NOT BE USED)
063	3F	MONGOLIAN LETTER ZRA	127	7F	(THIS POSITION SHALL NOT BE USED)

dec	hex	Name
-	-	MONGOLIAN LETTER AG ANUSVARA-ONE
128	80 81	MONGOLIAN LETTER AG ANUSVARA-TWO
129		MONGOLIAN LETTER AG VISARGA-ONE
130	82	MONGOLIAN LETTER AG VISARGA-TWO
131		MONGOLIAN LETTER AG VISARGA-1WO MONGOLIAN LETTER AG DAMARU
132		MONGOLIAN LETTER AG UBADAMA
133		MONGOLIAN LETTER AG INVERTED UBADAMA
134	86	MONGOLIAN LETTER AG BALUDA
136		MONGOLIAN LETTER AG THREE BALUDA
137	89.	MONGOLIAN LETTER AG A
138		Mongolian Letter ag i
139	1	MONGOLIAN LETTER AG KA
140		MONGOLIAN LETTER AG NGA
141	1	MONGOLIAN LETTER AG CA
142	1	MONGOLIAN LETTER AG TTA
143		MONGOLIAN LETTER AG TTHA
144		MONGOLIAN LETTER AG DDA
145	1 7 7	Mongolian Letter ag nna
4		Mongolian Letter ag ta
146	1	MONGOLIAN LETTER AG DA
148	1	MONGOLIAN LETTER AG PA
	1	MONGOLIAN LETTER AG PHA
150	4	MONGOLIAN LETTER AG SSA
151	1	MONGOLIAN LETTER AG ZHA
152	1	Mongolian Letter ag Za
153	1	MONGOLIAN LETTER AG AH
154	1	MONGOLIAN LETTER TODO AG TA
155		MONGOLIAN LETTER TODO, AG ZHA
156	-	MONGOLIAN LETTER MANCHU AG GHA
157		MONGOLIAN LETTER MANCHU AG NGA
158	1	MONGOLIAN LETTER MANCHU AG CA
159		MONGOLIAN LETTER MANCHU AG JHA
160		MONGOLIAN LETTER MANCHU AG TTA
161	1	MONGOLIAN LETTER MANCHU AG DDHA
162	1	MONGOLIAN-LETTER MANCHU AG TA
163		MONGOLIAN LETTER MANCHU AG DHA
164	1	MONGOLIAN LETTER MANCHU AG SSA
165	1	MONGOLIAN LETTER MANCHU AG CYA
166	1	MONGOLIAN LETTER MANCHU AG ZHA
163		MONGOLIAN LETTER MANCHU AG CA
168	1	MONGOLIAN LETTER-AG HALF U
169		***
170		
17		
17		
17	1	
17		MONGOLIAN LETTER POSITIONAL SELECTER

The Usage of the Peculiar Symbols and the Control Symbols of Mongolian, Todo, Sibe, Manchu Scripts

The following text is consisted of 2 parts: the 1st part (1-12) describes the usage of the Peculiar Symbols, the other part (13-15) introduces the 3 controlcharacters used in common text. Due to the presentation forms not being coded, to avoid ambiguity in information exchange, usage rules of Peculiar Symbols and Control characters are required.

1. (000) — Mongolian space. In Mongolian, Todo, Sibe, and Manchu scripts, apart form the space of common use, a "Mongolian space" which covers the two thirds of a full character is used. This "Mongolian space" is used between the divided—writing attached components and the stems.

Examples of	the usage of	"Mongolian space"	
attached component	way of input	attached component	way of input
<i>™</i> \	□5 1K j	₩	□1 - 1/□1
₽	□1ᢐ/□1ᢐᡕ	50	□ র 1০ / □ র 1০ নৃ
98	□4 1 ₀ /□4 1 ₀	المسر	□ 4 かりょう
407	□ ٩ŋ٥ŋ <u></u>	•	□ %
14	□5 1 ℃	+ 2 √.	ロがェル/ロウェウ
ar.	= 0 √ 1/= 0 7 1	41 %	□9₩ ₭/□9ŋ₭
€ hot	□1 ₩ ◊ □ ₩	፟ ሌየን .	im γη .
, \	□10 g/□107 g	₩	ロ0 W 1/口0 り 1
<i>राज</i> र	□K; ₩ x/□K; 1	ُ رہت ید ت	□j10

^{2. (001)—} Birga. It is used at the beginning of an article or a paragraph in Mongolian and Todo scripts.

^{3. · · · (002) —} Ellipsis. The ellipsis in Mongolian and Todo Scripts is four dots.

^{4. (003) —} Comma . Peculiar comma of Mongolian script.

^{5. * (004) —} Period. Peculiar period of Mongolian script.

^{6. - (005) -} Colon . Colon of Mongolian and other three scripts.

^{7. (006) —} Four dots. It is used at the end of an article or paragraph in Mongolian and Todo scripts.

① Number in parenthesis indicates the code number of the character.

- 8. (007) Mongolian Combination Symbol.
- 9. 1 (008) Peculiar line—shift symbol of Todo script. Is put at the beginning of the second line.
- 10. r (009) Peculiar separaion symbol of Sibe script.
- 11. (010) Comma of Manchu script.
- 12. (011) Period of Sibe script.
- 13. (012)— Word—medial Jonier. It is used in Mongolian and Todo scripts and it is different form the hyphen of common use. It must attach the upper and lower characters as one, its width should be the same as the "nirugu" (spine of a word). The word—medial hyphen are mainly used between the consonant in the final of the first root and the vowel in the initial of the second root for the double—root words with the function of syllable—dividing. For example:

Mongolian	script(examples)	way of input	Todo	script (examples)	way of input
₩	նդապոմ√(bayan—ayul	a)\$\dagge\}	₩	भिरतकोत्तर (bayan — aldar)・1
•	ใกล้สลาร์ (qas—erdeni) • 17	π	गुलीन्द्रकरो (qas—erdeni) •1e
**	्रीनेस्क्रिले (yal—irekü)	-10	76	भूगोस्द्राति (yal—ireku)	•1e
70	भोदामान्त्र (altan—odu)• 1 0	77	भिरितासम्प्र(altan—odu) •1 u
10	improved (nasun—uri	nu-) o-	प्	निक्त्युद्धि (nasun—ur	tu •)1 0
ग्यद	immetine(nasun—ul)	ei-)1 u	*पे	impiach(nasun—ulj	ei} 1t
10	ऋरूक्र√(čing—ünen)	• 1 ₀ ç-	10	رُدing—tinen)	• 1 0

14. [1] (172) — The first identifier. It is used to distinguish the different variants of the same letter appearing under the same condition in Mongolian scripts. For example:

Mongolian	(examples)	way of input	different form
)	m/y (aq—a)	@₩	1
ז	h (ma)	₩	1
,	₩ ₇ (em—e)	, ··· 🖃 📆	.
₹ .	्रिष्ट (kino)	··· 10	•
घर	(portüyal)	··· 10v ···	.
97	ten (sti)	··· 1en	•
5	(yanbü)	··· lov -	•
Ī	(činw—a)ر کری	···[-]1	•
۵,	¹क्) (eb)	··· □ 0	9
4	स्ते (sig)	··· - Ú	Ŋ

① Here traditional Mongolian transliteration into Latin is applied.

^{2 ...} indicates that there is Mongolian letter

15. (173)— The second identifier. It is only used for the single present of Mongolian letters form changing, details in "Rules of The Mongolian Todo Sibe Manchu Presentations to singly present"

16. * (174) — Positional selector. The location symbol of the four scripts is mainly used to indicate the characters' position in the word. For example; indicates the initial position of consonant (indicates the medial position of consonant (indicates the final position of consonant