

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

Doc Type: Working Group Document
Title: Preliminary proposal to encode the Tai Khao script in UCS
Source: Kushim Jiang (姜兆勤)
Status: Individual Contribution
Action: For consideration by UTC
Date: 2020-07-18

1 Introduction

The Tai Khao script (ᩉ᩠ᨦ᩵ᩁᩬᨦ, *tai kbhao*) is used for writing Tai Dón language (ISO 639-3: twh), a Kam-Tai language spoken by forty thousand people in China (Yunnan Province) [Gao, 1999], by two-hundred and eighty thousand people in Vietnam (mainly in Lai Châu Province) [Donaldson et Edmondson, 1997] and by one-hundred and three thousand people in Laos (mainly in Houaphanh Province) [Joshua Project, 1999]. The Tai Dón language is closely related to Lao and Thai. The Tai Viet script is also used for writing Tai Dón language as a unified alphabet for Tai languages [Ngo et Brase, 2006].

The Tai Khao script (傣皓文) is also called the White Tai script (白傣文) or the Tai Dón script (傣端文), which is consistent with their ethnic name. People using Tai Khao script are mainly distributed in Jinping County, so Chinese literature usually refers to it as Jinping Tai script (金平傣文). From the materials published by locals, the Tai Khao script is the most common name.

According to folklore, the Tai Khao script has a history of more than 700 years, but there is no record of when it was introduced into China [Luo, 1992].

There is limited information available on the Tai Khao script in English. Most of the materials on the script are written in Chinese. The Department of Folk Languages in Yunnan University for Nationalities, Ethnic Affairs Commission of Jinping County and Cultural Center of Jinping County have published multilingual primers and educational materials of the script (see figures 2–4). There are also instructional videos available on Tencent (see figures 9–10). Six typefaces have been developed by Luo Wenbin (see figures 9–11).

The reasons why Tai Khao script is not unified with Tai Viet script are:

- There are less consonants and more vowels in Tai Khao script;
- Tai Khao script shares few presentation forms with Tai Viet script;
- There are different combination principles in Tai Khao script.

2 Script Details

2.1 Structure

Tai Khao script is an abugida script and is written left to right. The finals behave like marks on the top, down, left and right side of the initials.

2.2 Character Names

There is currently no Latinization scheme for Tai Dón language in use. The temporary character names will be updated with the improvement of the proposal.

2.3 Initials

There are 44 initials in high tone class and low tone class. Particularly, the letter o can also behave as a part of final, and more information is needed to determine the attributes of it.

Code Point		Character Name (Temporary)	Value
xx00		TAI KHAO LETTER LOW KO	/k/
xx01		TAI KHAO LETTER HIGH KO	/k/
xx02		TAI KHAO LETTER LOW KHO	/k ^h /
xx03		TAI KHAO LETTER HIGH KHO	/k ^h /
xx04		TAI KHAO LETTER LOW KHHO	/x/
xx05		TAI KHAO LETTER HIGH KHHO	/x/
xx08		TAI KHAO LETTER LOW NGO	/ŋ/
xx09		TAI KHAO LETTER HIGH NGO	/ŋ/

xx0A	ㄌ	TAI KHAO LETTER LOW CO	/tɕ/
xx0B	ㄌ̃	TAI KHAO LETTER HIGH CO	/tɕ/
xx0C	ㄌ̃ʰ	TAI KHAO LETTER LOW CHO	/tɕʰ/
xx0D	ㄌ̃ʰ̃	TAI KHAO LETTER HIGH CHO	/tɕʰ/
xx0E	ㄌ̃	TAI KHAO LETTER LOW SO	/s/
xx0F	ㄌ̃̃	TAI KHAO LETTER HIGH SO	/s/
xx10	ㄋ̃	TAI KHAO LETTER LOW NYO	/ñ/
xx11	ㄋ̃̃	TAI KHAO LETTER HIGH NYO	/ñ/
xx12	ㄋ̃	TAI KHAO LETTER LOW DO	/d/
xx13	ㄋ̃̃	TAI KHAO LETTER HIGH DO	/d/
xx14	ㄊ	TAI KHAO LETTER LOW TO	/t/
xx15	ㄊ̃	TAI KHAO LETTER HIGH TO	/t/
xx16	ㄊ̃	TAI KHAO LETTER LOW THO	/tʰ/
xx17	ㄊ̃̃	TAI KHAO LETTER HIGH THO	/tʰ/
xx18	ㄋ̃	TAI KHAO LETTER LOW NO	/n/
xx19	ㄋ̃̃	TAI KHAO LETTER HIGH NO	/n/
xx1A	ㄅ	TAI KHAO LETTER LOW BO	/b/
xx1B	ㄅ̃	TAI KHAO LETTER HIGH BO	/b/
xx1C	ㄆ	TAI KHAO LETTER LOW PO	/p/
xx1D	ㄆ̃	TAI KHAO LETTER HIGH PO	/p/
xx1E	ㄆ̃	TAI KHAO LETTER LOW PHO	/pʰ/
xx1F	ㄆ̃̃	TAI KHAO LETTER HIGH PHO	/pʰ/

xx20	ຸ	TAI KHAO LETTER LOW FO	/f/
xx21	ຸ	TAI KHAO LETTER HIGH FO	/f/
xx22	ຸ	TAI KHAO LETTER LOW MO	/m/
xx23	ຸ	TAI KHAO LETTER HIGH MO	/m/
xx24	ຸ	TAI KHAO LETTER LOW YO	/j/
xx25	ຸ	TAI KHAO LETTER HIGH YO	/j/
xx28	ຸ	TAI KHAO LETTER LOW LO	/l/
xx29	ຸ	TAI KHAO LETTER HIGH LO	/l/
xx2A	ຸ	TAI KHAO LETTER LOW VO	/v/
xx2B	ຸ	TAI KHAO LETTER HIGH VO	/v/
xx2C	ຸ	TAI KHAO LETTER LOW HO	/h/
xx2D	ຸ	TAI KHAO LETTER HIGH HO	/h/
xx2E	ຸ	TAI KHAO LETTER LOW O	/ʔ/
xx2F	ຸ	TAI KHAO LETTER HIGH O	/ʔ/

2.4 Finals

There are 84 finals which could be represented by the initials above and another 19 characters below. The decision to merge the finals and the combining attributes of characters may be updated with the improvement of the proposal.

Code Point	Character Name (Temporary)	Value	
xx30	◌ᵢ	TAI KHAO MAI KA	/a/
xx31	◌ᵛ	TAI KHAO MAI KAA	/a/
xx32	◌ᵃ	TAI KHAO MAI KI	/i/

xx33	◌̊	TAI KHAO MAI KE	/e/
xx34	◌̋	TAI KHAO MAI KEE	/ɛ/
xx35	◌̌	TAI KHAO MAI KU	/u/
xx36	◌̍	TAI KHAO MAI KOO	/o/
xx37	◌̎	TAI KHAO MAI KO	/ɔ/
xx38	◌̏	TAI KHAO MAI KUE	/ɯ/
xx39	◌̐	TAI KHAO MAI KVE	/ə/
xx3A	◌̑	TAI KHAO MAI KAUE	/au/
xx3B	◌̒	TAI KHAO MAI KAI	/ai/
xx3C	◌̓	TAI KHAO MAI KAO	/au/
xx3D	◌̔	TAI KHAO MAI KAM	/am/
xx3E	◌̕	TAI KHAO MAI KAN	/an/
xx3F	◌̖	TAI KHAO MAI KANG	/aŋ/
xx40	◌̗	TAI KHAO MAI KAP	/ap/
xx41	◌̘	TAI KHAO MAI KAT	/at/
xx42	◌̙	TAI KHAO MAI KAK	/ak/

2.5 Tonal Signs

There are 9 tones marked by 2 characters.

Code Point	Character Name (Temporary)	Tone	Value
		1, high level	ᵇ
		2, low level	ᵇ
	[no mark]	7, high short abrupt	ᵇ
		8, low abrupt	ᵇ

			9, high long abrupt	1
xx43		TAI KHAO TONE ONE	5, high one	1
			6, low one	1
xx44		TAI KHAO TONE TWO	3, high two	1
			4, low two	1

2.6 Symbols

Like the Tai Viet script, there are 4 symbols used fixedly.

Code Point		Character Name (Temporary)	Value	Meaning
xx59		TAI KHAO SYMBOL MA	/ma/	horse
xx5A		TAI KHAO SYMBOL BUN	/bun/	moon
xx5B		TAI KHAO SYMBOL KUN	/kun/	person
xx5C		TAI KHAO SYMBOL NENG	/neŋ/	one

2.7 Punctuation

There are 4 kinds of punctuation in Tai Khao script. The character COMBINING DOT ABOVE is used for marking loudness and has been encoded.

Code Point		Character Name (Temporary)	Usage
xx5D		TAI KHAO SYMBOL MAI MEET	Same as period dot.
xx5E		TAI KHAO SYMBOL MAI SAM-1	Used for the sustain mark in songs.
xx5E, FE00			
xx5F		TAI KHAO SYMBOL MAI SAM-2	Used for title modification or content omission.
xx5F, FE00			
xx5F, FE01			

- Luo Meizhen 罗美珍. 1992. "Jinping Tai Script 金平傣文," in *Scripts used by Chinese Minorities 中国少数民族文字*. China Tibetology Press 中国藏学出版社. pp. 84–88.
- Luo Wenbin 罗文斌. 2017. *အပူၤ ဝါၣ်လိၣ် ဝါၣ်လိၣ် ဝါၣ်လိၣ်* 金平傣文教程. Binge Design Studio 斌戈设计工作室.
- Ngô Trung Việt, Jim Brase. 2006. Unified Tai Script for Unicode. [L2/06-041](#).
- Zhou Yaowen 周耀文, Luo Meizhen 罗美珍. 2001. *Research on Tai Dialect 傣语方言研究*. The Ethnic Publishing House 民族出版社.
- Zhou Youguang 周有光. 1998. *A Preliminary Study of Comparative Philology 比较文字学初探*. Language & Culture Press 语文出版社.

5 Figures

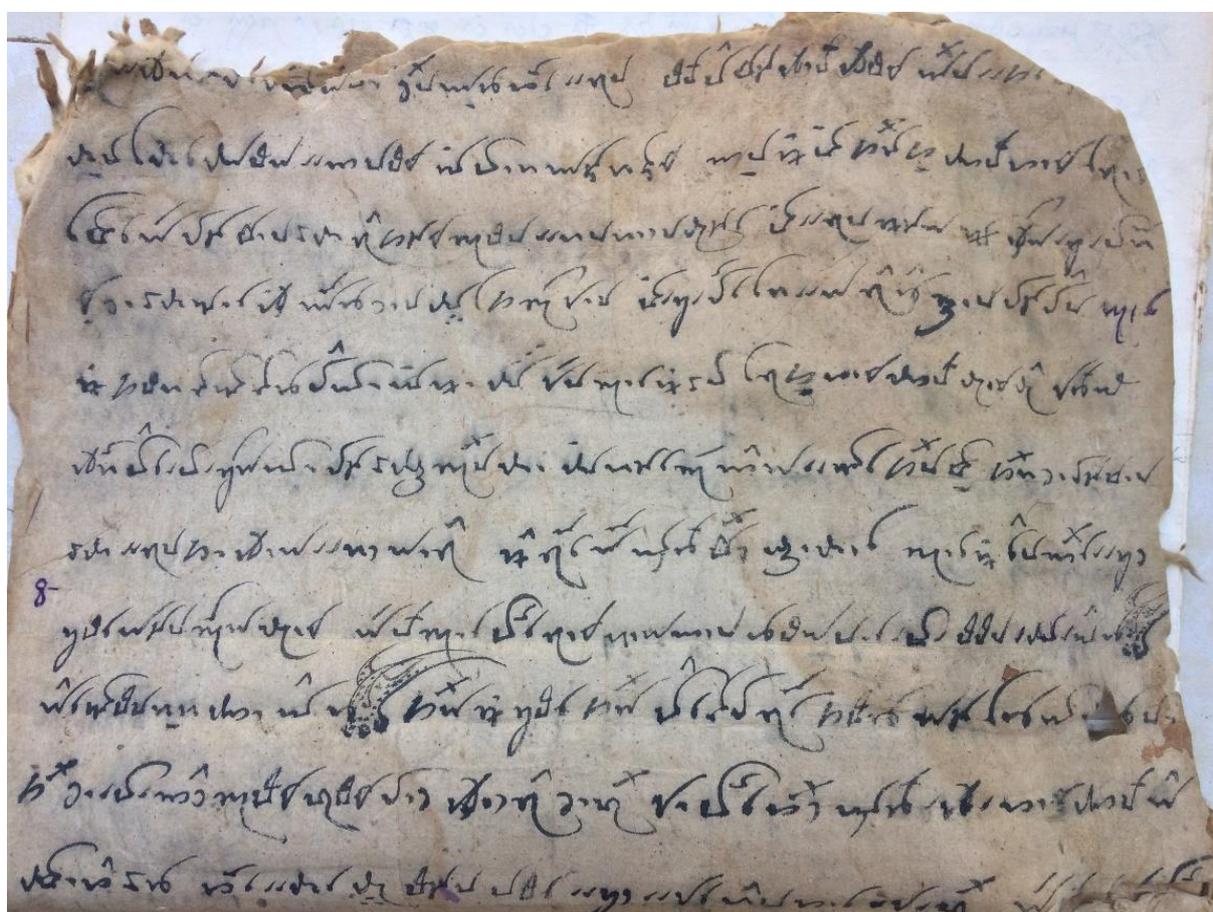


Fig. 1 A piece of Tai Khao manuscript ([Twitter](#))

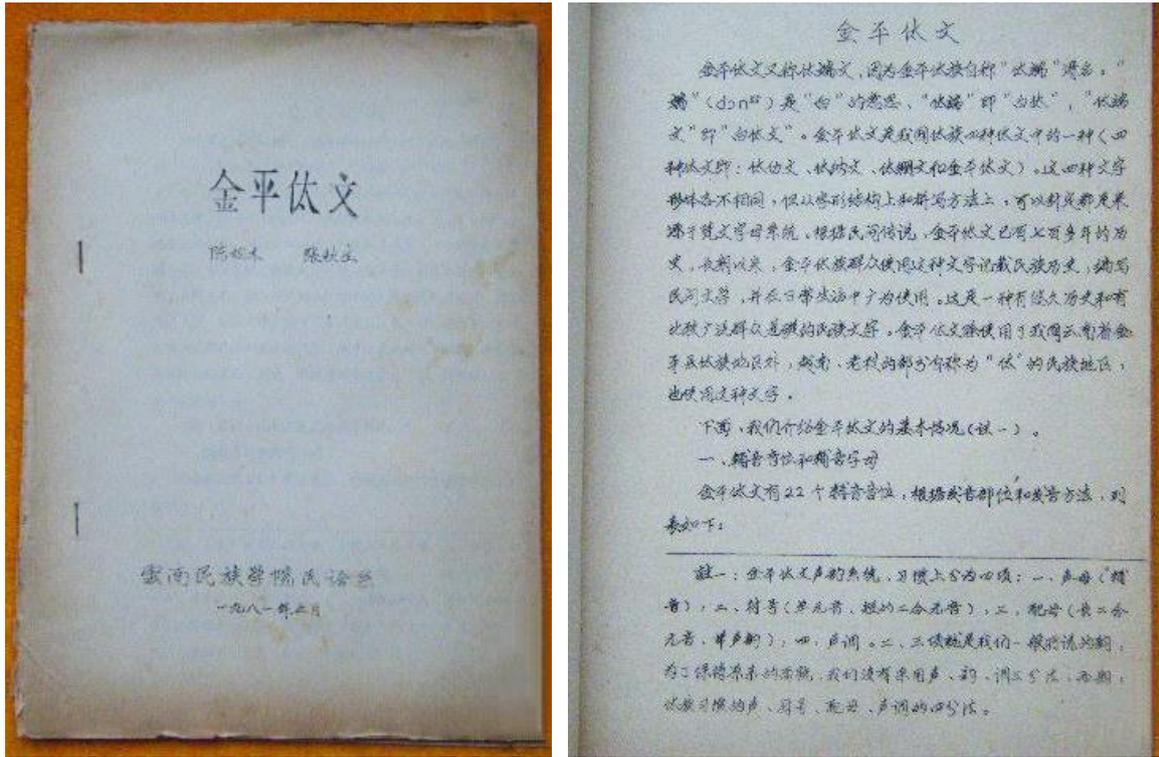


Fig. 2a, 2b A research report by Chen Xiangmu and Zhang Qisheng [Chen et Zhang, 1981] (Kongfz)

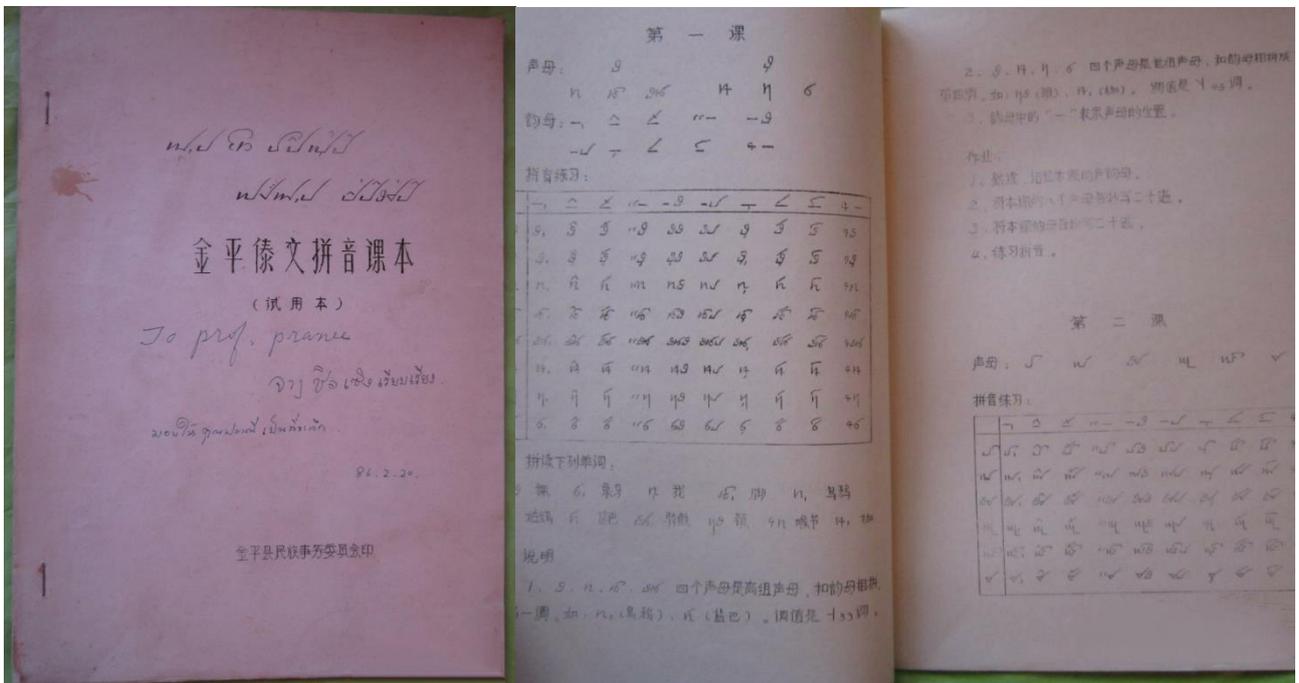


Fig. 3a, 3b A primer written by Ethnic Affairs Commission of Jinping County [Anon, 1986] (Kongfz)

金平傣文教程

——短期培训使用教程

金平苗族瑶族傣族自治县文化馆



编委主任：黄云青
 编委成员：陆艳梅 黄 灵
 李德海 曹文高
 罗文斌 白 彩
 刀明春
 主 编：罗文斌
 副主编：罗海珍 刘 琼
 刀明芬 陆树兵
 刘绍清 宋岁宁

字体版权：罗文斌
 金平县文化馆
 勐拉镇文化站
 金平农场文化站
 联合编制

斌戈设计制作室制
 二〇一七年元月

目录

序言	1
辅音字母表	3
元音字母表	4
第一课 基础元音	6
第二课 复合元音	9
复合元音字母表	10
第三课 辅音	12
第四课 声调、符号	16
第五课 代词 礼貌用语	18
第六课 对话	23
第七课 水果	25
第九课 餐具	26
第十课 身体	27
第十课 蔬菜	30
第十一课 衣服	32
第十二课 数字	33
第十三课 颜色	35
第十四课 生肖	36
第十五课 交通工具、电器	39
第十六课 傣文地名	40
第十七课 常用词汇	41

二、辅音字母助记词

n	en	ɬ	hɔ	n	nɔɔ	ŋ	ɲ	ɲɔ	ɲɔ	ɲ	ɲ
/k/	鸡	/x/	干净	/k/	铤	/x/	污垢	/hɔ/	骄傲	/ŋ/	蛇
ɬ	ɬɔɔ	m	m	ŋ	ŋɔ	n	n	ɲ	ɲɔ	ɲ	ɲ
/w/	锄头	/s/	刀	/w/	大象	/s/	鱼篓	/hɔ/	鳄鱼	/ŋ/	困难
m	m	ŋ	ŋɔ	n	n	ɲ	ɲɔ	ɲ	ɲɔ	ɲ	ɲ
/d/	眼睛	/t/	包	/d/	傣	/t/	塔	/hɔ/	厚	/n/	田
ɲ	ɲ	ɲ	ɲ	n	n	ɲ	ɲ	n	n	n	n
/p/	鱼	/ph/	鬼	/p/	背	/ph/	沙弥	/hɔ/	狗	/m/	猫
ɲ	ɲ	ɲ	ɲ	n	n	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
/f/	双胞胎	/vb/	花	/f/	火	/vb/	讲	/h/	末尾	/ŋ/	猴
ɲ	ɲ	ɲ	ɲ	n	n	ɲ	ɲ	n	n	n	n
/h/	螺	/r/	玩	/h/	黄牛	/r/	复话	/hɔ/	甜	/v/	镜子
ɲ	ɲ	ɲ	ɲ	n	n	ɲ	ɲ	n	n	n	n
/k/	米饭	/f/	筛子	/k/	蝌蚪	/f/	按	/hɔ/	拍	/n/	草

根据所列傣文单词，大家通过单词联想很容易将字母发音记住。白傣文字形也是傣族先民通过日常生活积累和观察所形成的一种象形字符。

如：nɔ 象，字母形似大象的大耳和长鼻。
 ɲɔ 猴，字母形似猴子长着长长的尾巴。

第四课 声调、符号

金平傣文共有六个声调值，两个声调符号，需要说明的是，声调随低、高辅音字母的使用而产生不同的调值。在日常的傣语发音中通常分为低音组轻声、一声、二声和高音组轻声、一声、二声。以 n、ɲ、ɲ 作为韵尾的复合元音在拼读时不再标注声调符号，发音时根据辅音字母所在组决定平声调值。



一、常用符号



金平傣文傣文符号形式多样，归类整理后共有以上几种，符号多见于文章、歌曲的开头及结尾。其用意多为省略及沿长。符号 ①、②、③ 多用于文章的标题修饰或内容的省略，符号 ④、⑤ 则用于记录歌曲的演唱延音的标注，如：oy.....oy.....。符号 ⑥ 则是白傣文的标点符号，代表着一句话的表述完成。即是逗号也是句号，同时也代表叹号，符号 ⑦ 成则为重音符号通常在无法标注声调的词语中使用，代表声音的轻重。

Fig. 4a, 4b A primer written by Luo Wenbin [Luo, 2017] (Meipian)

声 母

金平傣文声母有 44 个，按原来的次序排列如下：

阴调声母	阳调声母	阴调声母	阳调声母	阴调声母	阳调声母
✓	✓	⊙	⊙	၁	၂ 或 ၃
b	b	?	?	d	d
၁	၂	၃	၄	၅ 或 ၆	၇
tc	tc	k	k	x	x
၈ 或 ၉	၁၀	၁၁	၁၂	၁၃	၁၄
kh	kh	h	h	t	t
၁၅	၁၆	၁၇	၁၈	၁၉	၂၀
th	th	p	p	ph	ph
၂၁	၂၂	၂၃	၂၄	၂၅	၂၆
tsh	tsh	f	f	s	s
၂၇	၂၈	၂၉	၃၀	၃၁	၃၂
n	n	m	m	l	l
၃၃	၃၄	၃၅	၃၆	၃၇	၃၈
ŋ	ŋ	v	v	j	j
၃၉	၄၀				
n	n				

韵 母

	၁	၂	၃	၄	၅	၆	၇	၈	၉
	a	i	e	ε	u	o	ɔ	u	ə
၁									
au									
၂	၁		၃		၆	၇	၈	၉	၁
ai	ai		ei		ui	oi	ai	ui	ai
၃	၁	၂	၃	၄	၅				၆
au	au	iu	eu	eu					au
၄	၁	၂	၃	၄	၅	၆	၇	၈	၉
am	am	im	em	em	um	om	om	um	am
၅	၁	၂	၃	၄	၅	၆	၇	၈	၉
an	an	in	en	en	un	on	on	un	an
၆	၁	၂	၃	၄	၅	၆	၇	၈	၉
aj	aj	ij	ej	ej	uj	oj	aj	uj	aj
၇	၁	၂	၃	၄	၅	၆	၇	၈	၉
ap	ap	ip	ep	ep	up	op	op	up	ap
၈	၁	၂	၃	၄	၅	၆	၇	၈	၉
at	at	it	et	et	ut	ot	at	ut	at
၉	၁	၂	၃	၄	၅	၆	၇	၈	၉
ak	ak	ik	ek	ek	uk	ok	ak	uk	ak

Fig. 5a, 5b A Tai Khao alphabet by Zhou Yaowen and Luo Meizhen [Zhou et Luo, 2001]

字母表

高	组	低	组
⊙		⊙	
?		?	
၁	၂	၃	၄
k	x	၅	၆
၇	၈	၉	၁၀
tc	s	j	၁၁
၁၂	၁၃	၁၄	၁၅
t	th	n	၁၆
၁၇	၁၈	၁၉	၂၀
p	ph	m	၂၁
၂၂	၂၃	၂၄	၂၅
f	v	l	၂၆
၂၇	၂၈	၂၉	၃၀
၃၁	၃၂	၃၃	၃၄
h	d	b	၃၅
၃၆	၃၇	၃၈	၃၉
kh	tsh	၄၀	၄၁

韵母表

၁	၂	၃	၄	၅	၆	၇	၈	၉
a ₁	a ₂	i	e	ε	o	ɔ	u	ə
၁								
au								
၂	၁		၃		၆	၇	၈	၉
ai	a:i		ei		oi	oi	ui	ai
၃	၁	၂	၃	၄	၅			၆
au	a:u	iu	eu	eu				au
၄	၁	၂	၃	၄	၅	၆	၇	၈
aj	a:j	ij	ej	ej	uj	oj	aj	uj
၅	၁	၂	၃	၄	၅	၆	၇	၈
an	a:n	in	en	en	un	on	an	un
၆	၁	၂	၃	၄	၅	၆	၇	၈
am	a:m	im	em	em	um	om	am	um
၇	၁	၂	၃	၄	၅	၆	၇	၈
ak	a:k	ik	ek	ek	uk	ok	ak	uk
၈	၁	၂	၃	၄	၅	၆	၇	၈
at	a:t	it	et	et	ut	ot	at	ut
၉	၁	၂	၃	၄	၅	၆	၇	၈
ap	a:p	ip	ep	ep	up	op	ap	up

Fig. 6a, 6b A Tai Khao alphabet by Luo Meizhen [Luo, 1992]

四种傣文字母表

	(高)傣仂(低)		(高)金平(低)		傣哪		傣绷	
	老	新	老	新	老	新		
k	၁	၁	၁	၁	၁	၁	၁	၁
x	၂	၂	၂	၂	၂	၂	၂	၂
ng		၃	၃	၃	၃	၃	၃	၃
ts	၄	၄	၄	၄	၄	၄	၄	၄
s	၅	၅	၅	၅	၅	၅	၅	၅
j		၆	၆	၆	၆	၆	၆	၆
t	၇	၇	၇	၇	၇	၇	၇	၇
th	၈	၈	၈	၈	၈	၈	၈	၈
n		၉	၉	၉	၉	၉	၉	၉
p	၁၀	၁၀	၁၀	၁၀	၁၀	၁၀	၁၀	၁၀
ph	၁၁	၁၁	၁၁	၁၁	၁၁	၁၁	၁၁	၁၁
m		၁၂	၁၂	၁၂	၁၂	၁၂	၁၂	၁၂
f	၁၃	၁၃		၁၃	၁၃	၁၃	၁၃	၁၃
v		၁၄	၁၄	၁၄	၁၄	၁၄	၁၄	၁၄
l		၁၅	၁၅	၁၅	၁၅	၁၅	၁၅	၁၅
h	၁၆	၁၆		၁၆	၁၆	၁၆	၁၆	၁၆
d	၁၇	၁၇		၁၇	၁၇	၁၇		၁၇
b		၁၈		၁၈	၁၈			
kw		၁၉		၁၉	၁၉			၁၉
xw		၂၀		၂၀	၂၀			၂၀

Fig.7 A comparison table of four kinds of Tai scripts by Zhou Youguang [Zhou, 1998]

单元音	a		i	e	ɛ	ɔ		o	u	ɯ	ə
	a ₁	a ₂				ɔ ₁	ɔ ₂				
文字符号											

②双元音

共有 14 个，分为 i 尾、u 尾和 ɯ 尾三类。分别如下：

i 尾有 7 个：ǎi ai ɔi oi ui ɯi əi

u 尾有 6 个：ǎu au iu eu eu ou

ɯ 尾仅有 1 个：ǎɯ

③短元音 ǎ 与辅音尾构成的韵母

共有 6 个，即 ǎm、ǎn、ǎŋ、ǎp、ǎt、ǎk。其所对应的文字如下表：

韵母	ǎm	ǎn	ǎŋ	ǎp	ǎt	ǎk
文字符号						

(2) 配母

配母有 54 个，包括长元音 a 和其它元音与辅音尾构成的韵母。

辅音尾有 6 个，分清浊，清尾音为 -m、-n、-ŋ，浊尾音为 -p、-t、-k。列如下表：

am	im	em	ɛm	uɰ̃	om	ɔm	ɯm	əm
an	in	en	ɛn	un	on	ɔn	ɯn	ən
aŋ	iŋ	eŋ	ɛŋ	uŋ	oŋ	ɔŋ	ɯŋ	əŋ
ap	ip	ep	ɛp	up	op	ɔp	ɯp	əp
at	it	et	ɛt	ut	ot	ɔt	ɯt	ət
ak	ik	ek	ɛk	uk	ok	ɔk	ɯk	ək

Fig.8 A research on Tai Dón language and Tai Khao script [Dao, 2016]



Fig.9 Use of a Tai Khao typeface in a digital video (Tencent)



Fig.10 Use of a Tai Khao typeface in a digital video (Tencent)

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹.**

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

Please read Principles and Procedures Document (P & P) from <http://std.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 <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	Preliminary proposal to encode the Tai Khao script in UCS
2. Requester's name:	<i>Kushim Jiang</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual contribution</i>
4. Submission date:	<i>July 21, 2020</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<input type="checkbox"/>
(or) More information will be provided later:	<input checked="" type="checkbox"/> <i>yes</i>

B. Technical – General

1. Choose one of the following:		
a. This proposal is for a new script (set of characters):	<input checked="" type="checkbox"/> <i>yes</i>	
Proposed name of script:	<i>Tai Khao</i>	
b. The proposal is for addition of character(s) to an existing block:	<input type="checkbox"/>	
Name of the existing block:		
2. Number of characters in proposal:	<i>72</i>	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	<input checked="" type="checkbox"/> <i>yes</i>	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<input checked="" type="checkbox"/> <i>yes</i>	
b. Are the character shapes attached in a legible form suitable for review?	<i>shapes are scanned from manuscript and may need to be redesigned</i>	
5. Fonts related:		
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Kushim Jiang</i>	
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>Kushim Jiang, kushim_jiang@outlook.com</i>	
6. References:		
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<input checked="" type="checkbox"/> <i>yes</i>	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<input checked="" type="checkbox"/> <i>yes</i>	
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)?	<input type="checkbox"/>	

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.

¹ Form number: N4502-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, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain	<i>no</i>
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.)? If YES, with whom? If YES, available relevant documents:	<i>no</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	<i>yes</i> <i>Luo Wenbin. 2017. Tai Khao Script Tutorial. Binge Design Studio. [Luo, 2017]</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	<i>common</i>
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	<i>yes</i> <i>Jinping County, Yunnan Province, PRC</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	<i>yes</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	<i>yes</i>
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>no</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>yes-variant</i> <i>yes</i> <i>Variants that exist in the same book, considered as SVS.</i>
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>no</i>
11. Does the proposal include use of combining characters and/or use of composite sequences? 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:	<i>yes</i> <i>yes</i> <i>Combining characters are an inherent part of the writing system.</i> <i>no</i>
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	<i>no</i>
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	<i>no</i>