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

Doc Type:	**Working Group Document**
Title:	**Tai Tham Ad-hoc Meeting Report**
Source:	**Tai Tham Ad-hoc**
Action:	**For consideration by JTC1/SC2/WG2**
References:	**N3207, N3346, SC2/N3982**
Date:	**2008-Apr-18**

Experts from China, Thailand, Myanmar, UK and USA met at Payap University, Chiang Mai, Thailand on 21-22 January 2008, to discuss outstanding issues with the Tai Tham block in FPDAM 5 (SC2/N3982). The following are recommendations agreed upon by consensus of experts during the Tai Tham Ad Hoc meeting. These recommendations are made for consideration by WG2 as they review the Tai Tham encoding at WG2 Meeting 52, in Redmond.

The Ad Hoc committee would also encourage participating national bodies in SC2 to consider the recommendations presented here as they prepare ballot comments on FPDAM 5 (SC2/N3982).

1. Character Names: The proposal to change various character names as listed in N3346 was discussed. Since the purpose of character names is not for language analysis, the need for the character names to reflect letter pronounciation in a particular language is not needed. Furthermore it is understood that the Indic naming scheme is appropriate for this script. As a result the proposal to change the character names was withdrawn.

2. Digit Names: A proposal was made to rename the digit characters in the range U+1A90..U+1A99 to TAI THAM LAO DIGIT ZERO..NINE. It was decided that the names of the digit characters in the range U+1A80..U+1A89 should be changed to TAI THAM HORA DIGIT ZERO .. NINE and to keep the existing names of the characters in the range U+1A90..U+1A99 as specified in FPDAM5.
Recommendation: Change character names for range U+1A80..U+1A89 to TAI THAM HORA DIGIT ZERO .. NINE

3. Change Representative Glyph for U+1A68: A proposal was brought from N3346 to change the representative glyph for U+1A68 TAI THAM VOWEL SIGN UUE. After discussion it was decided to make no change to the representative glyph. The current representative glyph is more widely recognised than the proposed change and it was recognised that particular font implementations may change this glyph as appropriate.

4. Change Font for Chart of Representative Glyphs: It was unanimously agreed that the Khuen/Lue style of chart is more appropriate to the usage of the script and should be used.

5. Additional Tone Character: A proposal was brought from N3346 to add a new character: TAI THAM SIGN TONE MAI XO TSANG. After analysis it was decided that no such character need be added.

6. Move U+1A56: U+1A56 TAI THAM LETTER LOW HA is listed following TAI THAM LETTER A in both the Northern Thai and Khuen alphabetical lists. It was decided, therefore to propose its move from U+1A56 to U+1A50 and to move the characters in the range U+1A50..U+1A55 to the range U+1A51 .. U+1A56.

Recommendation: Move character U+1A56 TAI THAM LETTER LOW HA to U+1A50 and move characters in the range U+1A50..U+1A55 to the range U+1A51 .. U+1A56.

7. Change Representative Glyph for U+1A31: The character shape for U+1A31 TAI THAM LETTER HIGH RATHA in Khuen/Lue is different from that in Northern Thai. The current representative glyph in the FPDAM5 chart (which is intended to be using Khuen/Lue style glyphs) reflects the Northern Thai shape. It was decided to change the glyph to reflect the Khuen/Lue shape. The shape should reflect that found in "Khün Reader" (Anatole-Roger PELTIER), p28, 3rd character.

Recommendation: Change the representative glyph for U+1A31 TAI THAM LETTER HIGH RATHA to Khuen/Lue shape.

8. Remove Language Specific Letters: There was a strong consensus that character pairs U+1A28 & U+1A29, U+1A2A & U+1A2B, U+1A2C & U+1A2D, and U+1A4E & U+1A4F are really just font style differences. And since sharing text between the languages is considered a high value and that fonts that support both Khuen/Lue and Northern Thai are unlikely to be created, it was felt that the language communities would be better served by removing the language specific letters and unifying them with their default characters. In addition, since the character shapes for U+1A31 TAI THAM LETTER HIGH RATHA are different between Khuen/Lue and Northern Thai, yet another language specific letter would have to be added.

Recommendation: Remove U+1A28 TAI THAM LETTER HIGH CHA; rename U+1A29 TAI THAM LETTER KHUEN HIGH CHA to TAI THAM LETTER HIGH CHA. Remove U+1A2B TAI THAM LETTER NORTHERN THAI LOW CA. Remove U+1A2D TAI THAM LETTER NORTHERN THAI LOW SA. Remove U+1A4F TAI THAM LETTER NORTHERN THAI A. The gaps created should be filled by shifting characters in the range U+1A29..U+1A5F upwards.

9. Add New Consonant Sign: Khuen alone uses two subjoined forms of U+1A41 TAI THAM LETTER MA. The existing subjoined form is widely used, but in addition in some situations another form which is identical in shape to a full LETTER MA (but smaller and placed below the previous base character) is used.

Recommendation: Add a new character TAI THAM CONSONANT SIGN MA taking a representative glyph of a reduced sized U+1A41 TAI THAM LETTER MA as a combining character below the base line. This character should be added immediately following U+1A5F TAI THAM CONSONANT SIGN HIGH RATHA OR LOW PA.

10. Mai Karan: Concerns were raised regarding having two forms of mai kang lai (U+1A5B TAI THAM SIGN MAI KANG LAI and U+1A5C TAI THAM SIGN KHUEN MAI KANG LAI): there is only one mai kang lai, but a separate mai karan character is required for Khuen and Lue. (This is separate from U+1A7A TAI THAM SIGN RA HAAM, which is sometimes used with a similar function.). The glyph for mai karan is that of U+1A58 in the chart of FPDAM 5. All agreed that the glyph for mai kang lai should be that of LANNA SIGN MAI KANG LAI from the Lanna-style version of the chart in the proposal document N3207R.

Recommendation: Delete U+1A5C TAI THAM SIGN KHUEN MAI KANG LAI and close up the gap by shifting characters in the range U+1A5D..U+1A5F upwards. Change the representative glyph of U+1A5B TAI THAM SIGN MAI KANG LAI to that of LANNA SIGN MAI KANG LAI (1A5A) from the Lanna-style version of the chart in the proposal document N3207R . Add a new

character U+1A7C TAI THAM SIGN KHUEN-LUE KARAN with the shape of the U+1A58 in FPDAM5.

11. Move Great Sa: Removing some characters allows for a reorganisation and the opportunity to move U+1A7E TAI THAM LETTER GREAT SA to immediately following U+1A57 TAI THAM LETTER LAE.It was agreed this position would be preferable.
Recommendation: Move U+1A7E TAI THAM LETTER GREAT SA to immediately following U+1A57 TAI THAM LETTER LAE.

12. Change name of U+1A5A: In order to bring the name of this character into line with other character names it was agreed to rename this character TAI THAM CONSONANT SIGN LA TANG LAI.
Recommendation: Rename U+1A5A TAI THAM SIGN LOLA HOY KONGNOT to be TAI THAM CONSONANT SIGN LA TANG LAI.

13. Recommendation to approve encoding. There was consensus that the Tai Tham characters found in FPDAM 5, with changes as recommended here, are ready for encoding. The Ad Hoc committee recommends that WG2 adopt these changes and progress the Tai Tham script toward final approval as part of Amendment 5.

Those attending were: Chapana Pinngoen, Social Research Institute, Chiang Mai University; Martin Hosken, SIL International and Payap University; Peter Constable, Microsoft; Phra Arnont, Wat Tha Kradas; Phramaha Boontip, Wat Tha Kradas; Phramaha Jirasak, Wat Bupparam; Pichai Saengboon, Center for the Promotion of Art and Culture, Chiang Mai University; Roger Casas; U Hong Kham, Keng Tung; Victor Roetman, SIL International; Wyn Owen, Payap University; Yu Kanglong, "Xishuangbanna Daily" Newspaper, Jinghong, China; Yan Xiang, Ethnic Research Institute, Jinghong, China.

Michael Everson (Contributing Editor for ISO/IEC 10646) provided a revised chart reflecting the recommendations of the Ad Hoc Committee for inclusion in the Ad Hoc Committee Report.

Adrian Cheuk (SIL International) provided a translation of this report into Chinese.

Enclosed is a revised chart and character names list reflecting the changes proposed in this document.

Revision History

22-Jan-2008	Original
8-Feb-2008	Fix recommendation 10 reference to MAI KANG LAI from U+1A5D to U+1A5B Add page numbers
18-Apr-2008	Fix N3270R to N3207R. Correct Yu Kanglong's name.

国际标准化组织
通用多字节编码字符集

文件类别： **工作组文件**
标题： **老傣文专案会议报告**
来源： **老傣文专案小组**
行动： **交 JTC1/SC2/WG2 审议**
参考： **N3207，N3346，SC2/N3982**
日期： **2008 年 4 月 18 日**

来自中国、泰国、缅甸、英国和美国的专家于 2008 年 1 月 21–22 日在泰国清迈 Payap 大学举行会议，讨论 FPDAM 5（第五补充集最后初稿，参文件 SC2/N3982）中关于老傣文国际码悬而未决的问题。以下是经出席老傣文专案会议的专家协商后一致通过的建议，以供 WG2（国际标准化组织第 2 工作组）于 Redmond（美国华盛顿州雷德蒙市）第 52 次会议上检讨老傣文编码方案时审议。

专案小组也鼓励有份参与 SC2 的国家代表在准备就 FPDAM 5 (SC2/N3982) 投票时考虑这里所提出的建议。

1、字符名称： 大会就文件 N3346 中建议更改的字符名称进行了讨论。由于设立字符名称的目的并不是为了语言分析，要求字符名称反映某一特定语言中的读音是没有必要的。此外，大家都明白采用 Indic（印度文字体系）的命名方式对老傣文是恰当的。因此，要求改变字符名称的动议被撤回。

2、数字名称： 有人提议把范围 U+1A90..U+1A99 的数字改名为 TAI THAM LAO DIGIT ZERO..NINE。会议决定应把范围 U+1A80..U+1A89 的数字改名为 TAI THAM HORA DIGIT ZERO.. NINE，并保留在 FPDAM 5 中范围 U+1A90..U+1A99 的数字现有的名字。
建议：把范围 U+1A80..U+1A89 的数字改名为 TAI THAM HORA DIGIT ZERO.. NINE

3、改变字符 U+1A68 的代表字形： N3346 建议改变字符 U+1A68 TAI THAM VOWEL SIGN UUE 的代表字形 U+1A68。经讨论后，大会决定不对代表字形作出改变。目前的代表字形实较建议中的改变被更广泛地认可，而且制作字体时可以改变这一字形以应需求。

4、改变代表字形图的字体： 普遍认为傣痕／傣仂风格的图表对老傣文的使用比较恰当，应使用该风格的字体。

5、新增的声调字符： N3346 建议加入一个新的字符：TAI THAM SIGN TONE MAI XO TSANG。经过分析后，大会决定不需要增加这字符。

6、将 U+1A56 移位： 字符 U+1A56 TAI THAM LETTER LOW HA 在泰北和傣痕风格字符列表中都被列于字符 TAI THAM LETTER A 之后。因此大会决定动议将该字符（LOW HA）从 U+1A56 移到 U+1A50，并将范围 U+1A50..U+1A55 的字符移到 U+1A51..U+1A56。
建议：将字符 U+1A56 TAI THAM LETTER LOW Ha 移至 U+1A50，并将范围

U+1A50..U+1A55 的字符移到 U+1A51..U+1A56。

7、改变字符 U+1A31 的代表字形：字符 U+1A31 TAI THAM LETTER HIGH RATHA 的字形在傣痕／傣仂写法中跟泰北写法不同。FPDAM 5 字符表原定采用傣痕／傣仂风格的字形，但现时表中该字符的代表字形却呈泰北形状。大会决定将其改变至傣痕／傣仂形状，并以《傣痕读本》（Anatole-Roger PELTIER 著）第 28 页第三个字母的形状为蓝本。
建议：改变字符 U+1A31 的代表字形至傣痕／傣仂风格的形状。

8、除去只在特定语言中使用的字母：与会者一致认为 U+1A28 和 U+1A29、U+1A2A 和 U+1A2B、U+1A2C 和 U+1A2D，以及 U+1A4E 和 U+1A4F 这四组字符各自的分别实为字形风格不同而已。同时，由于能在各语言间共享文字资讯被视为宝贵，而能同时支援傣痕／傣仂及泰北风格的字体面世的机会很低，大会认为将只在特定语言中使用的字母除去，并把它们统一以默认字符代表，将对各语言群体更为有利。再者，由于字符 U+1A31 TAI THAM LETTER HIGH RATHA 的字形在傣痕／傣仂写法中跟泰北写法不同，如不采取统一默认代表字符的做法，将需为这些字形再增加一个只在特定语言中使用的字母。
建议：删除 U+1A28 TAI THAM LETTER HIGH CHA；将 U+1A29 TAI THAM LETTER KHUEN HIGH CHA 改名为 TAI THAM LETTER HIGH CHA。删除 U+1A2B TAI THAM LETTER NORTHERN THAI LOW CA。删除 U+1A2D TAI THAM LETTER NORTHERN THAI LOW SA。删除 U+1A4F TAI THAM LETTER NORTHERN THAI A。将范围 U+1A29..U+1A5F 内的字符上移，以填补删除上述字符后所留下的空隙。

9、添加新的辅音字符：在傣痕语中，字符 U+1A41 TAI THAM LETTER MA 有两种不同的复合型式。现时在方案里的复合型式被广泛使用，但在某些情况下另一种形式会被使用；该种形式等同缩小了的 LETTER MA，放在前面的基准字符下面。
建议：增加一个新的字符 TAI THAM CONSONANT SIGN MA，以 U+1A41 TAI THAM LETTER MA 的代表字形缩小放于基准线下。这个字符的码位应紧接 U+1A5F TAI THAM CONSONANT SIGN HIGH RATHA OR LOW PA 之后。

10、Mai Karan：对于符号 mai kang lai 现有两种形式（U+1A5B TAI THAM SIGN MAI KANG LAI 及 U+1A5C TAI THAM SIGN KHUEN MAI KANG LAI），专家表示关注：老傣文只有一个 mai kang lai，但傣痕语和傣仂语需要用到另一个字符 mai karan。（虽然 U+1A7A TAI THAM SIGN RA HAAM 有时候与 mai karan 用法相似，但二者是独立的。）mai karan 的字形就是 FPDAM 5 字符表中 U+1A58 的字形。大会一致认为 mai kang lai 的字形应采用方案 N3207R 里泰北风格字符表中 LANNA SIGN MAI KANG LAI 的字形。
建议：删除 U+1A5C TAI THAM SIGN KHUEN MAI KANG LAI，并将范围 U+1A5D..U+1A5F 内的字符上移一个码位以填补空隙。将 U+1A5B TAI THAM SIGN MAI KANG LAI 的代表字形改为方案 N3207R 里泰北风格字符表中 LANNA SIGN MAI KANG LAI（1A5A）的字形。增加一个新字符 U+1A7C TAI THAM SIGN KHUEN-LUE KARAN，其形状为 FPDAM 5 中 U+1A58 的字形。

11、将 Great Sa 移位：由于删除了一些字符，字符表得以重组，有机会把 U+1A7E TAI THAM LETTER GREAT SA 移到紧接 U+1A57 TAI THAM LETTER LAE 之后。大家同意这个位置较为可取。
建议：将 U+1A7E TAI THAM LETTER GREAT SA 移到紧接 U+1A57 TAI THAM LETTER LAE 之后。

12、将 U+1A5A 改名：为了与其他字符名称吻合，大会同意将此字符改名为 TAI THAM

CONSONANT SIGN LA TANG LAI。

建议：将 U+1A5A TAI THAM SIGN LOLA HOY KONGNOT 改名为 TAI THAM CONSONANT SIGN LA TANG LAI。

13、建议批准编码：与会者一致认为 FPDAM 5 中的老傣文字符在经过本报告所建议的修改后已可进行编码。本专案小组建议 WG2 采纳这些修改，并将老傣文提升至最后批准阶段，好成为第五补充集的一部分。

出席者有：Chapana Pinngoen（清迈大学社会研究所）；Martin Hosken（世界少数民族语文研究院及 Payap 大学）；Peter Constable（微软）；Phramaha Boontip（Tha Kradas 寺）；Phramaha Jirasak（Bupparam 寺）；Pichai Seangboon（清迈大学艺术文化推广中心）；Pra Arnont（Tha Kradas 寺）；Roger Casas；U Hong Kham（景栋）；卢永凯（世界少数民族语文研究院）；Wyn Owen（Payap 大学）；玉康龙（中国景洪西双版纳报社）；岩香（中国景洪民族研究所）。

Michael Everson（ISO/IEC 10646 撰稿编辑）提供了一个根据本专案小组提出的建议而修正的字符表，以供专案小组报告附载。

卓耀荣（世界少数民族语文研究院）将本报告翻译成中文。

附上一个根据本报告建议的修改而修正的字符表及字符名称列表。

	1A2	1A3	1A4	1A5	1A6	1A7	1A8	1A9	1AA
0	1A20	1A30	1A40	1A50	1A60	1A70	1A80	1A90	1AA0
1	1A21	1A31	1A41	1A51	1A61	1A71	1A81	1A91	1AA1
2	1A22	1A32	1A42	1A52	1A62	1A72	1A82	1A92	1AA2
3	1A23	1A33	1A43	1A53	1A63	1A73	1A83	1A93	1AA3
4	1A24	1A34	1A44	1A54	1A64	1A74	1A84	1A94	1AA4
5	1A25	1A35	1A45	1A55	1A65	1A75	1A85	1A95	1AA5
6	1A26	1A36	1A46	1A56	1A66	1A76	1A86	1A96	1AA6
7	1A27	1A37	1A47	1A57	1A67	1A77	1A87	1A97	1AA7
8	1A28	1A38	1A48	1A58	1A68	1A78	1A88	1A98	1AA8
9	1A29	1A39	1A49	1A59	1A69	1A79	1A89	1A99	1AA9
A	1A2A	1A3A	1A4A	1A5A	1A6A	1A7A			1AAA
B	1A2B	1A3B	1A4B	1A5B	1A6B	1A7B			1AAB
C	1A2C	1A3C	1A4C	1A5C	1A6C	1A7C			1AAC
D	1A2D	1A3D	1A4D		1A6D				1AAD
E	1A2E	1A3E	1A4E		1A6E				
F	1A2F	1A3F	1A4F		1A6F	1A7F			

The Tai Tham script is also known as Lanna as well as Old Tai Lue. It is used for the Khuen, Northern Thai, and Tai Lue languages. The glyphs shown in the code chart are in Khuen and Tai Lue style.

Consonants

1A20	ဢ	TAI THAM LETTER HIGH KA
1A21	ခ	TAI THAM LETTER HIGH KHA
1A22	၆	TAI THAM LETTER HIGH KXA
1A23	၀	TAI THAM LETTER LOW KA
1A24	၆	TAI THAM LETTER LOW KXA
1A25	ဢ	TAI THAM LETTER LOW KHA
1A26	၁	TAI THAM LETTER NGA
1A27	၁	TAI THAM LETTER HIGH CA
1A28	၁	TAI THAM LETTER HIGH CHA
1A29	၁	TAI THAM LETTER LOW CA
1A2A	၆	TAI THAM LETTER LOW SA
1A2B	၁	TAI THAM LETTER LOW CHA
1A2C	၁	TAI THAM LETTER NYA
1A2D	၁	TAI THAM LETTER RATA
1A2E	၁	TAI THAM LETTER HIGH RATHA
1A2F	၁	TAI THAM LETTER DA
1A30	၁	TAI THAM LETTER LOW RATHA
1A31	၁	TAI THAM LETTER RANA
1A32	၁	TAI THAM LETTER HIGH TA
1A33	၁	TAI THAM LETTER HIGH THA
1A34	၁	TAI THAM LETTER LOW TA
1A35	၁	TAI THAM LETTER LOW THA
1A36	၁	TAI THAM LETTER NA
1A37	၁	TAI THAM LETTER BA
1A38	၂	TAI THAM LETTER HIGH PA
1A39	၁	TAI THAM LETTER HIGH PHA
1A3A	၆	TAI THAM LETTER HIGH FA
1A3B	၁	TAI THAM LETTER LOW PA
1A3C	၆	TAI THAM LETTER LOW FA
1A3D	၁	TAI THAM LETTER LOW PHA
1A3E	၁	TAI THAM LETTER MA
1A3F	၁	TAI THAM LETTER LOW YA
1A40	၂	TAI THAM LETTER HIGH YA
1A41	၁	TAI THAM LETTER RA
1A42	၁	TAI THAM LETTER RUE
1A43	၁	TAI THAM LETTER LA
1A44	၂	TAI THAM LETTER LUE
1A45	၀	TAI THAM LETTER WA
1A46	၁	TAI THAM LETTER HIGH SHA
1A47	၁	TAI THAM LETTER HIGH SSA
1A48	၁	TAI THAM LETTER HIGH SA
1A49	၁	TAI THAM LETTER HIGH HA
1A4A	၁	TAI THAM LETTER LLA
1A4B	၁	TAI THAM LETTER A
1A4C	၁	TAI THAM LETTER LOW HA

Independent vowels

1A4D	၁	TAI THAM LETTER I
1A4E	၁	TAI THAM LETTER II
1A4F	၁	TAI THAM LETTER U
1A50	၁	TAI THAM LETTER UU
1A51	၁	TAI THAM LETTER EE
1A52	၁	TAI THAM LETTER OO

Consonants

1A53	၁	TAI THAM LETTER LAE
1A54	၁	TAI THAM LETTER GREAT SA
1A55	၁	TAI THAM CONSONANT SIGN MEDIAL RA
1A56	၁	TAI THAM CONSONANT SIGN MEDIAL LA
1A57	၁	TAI THAM CONSONANT SIGN LA TANG LAI
1A58	၁	TAI THAM SIGN MAI KANG LAI
1A59	၁	TAI THAM CONSONANT SIGN FINAL NGA
1A5A	၁	TAI THAM CONSONANT SIGN LOW PA
1A5B	၁	TAI THAM CONSONANT SIGN HIGH RATHA OR LOW PA
1A5C	၁	TAI THAM CONSONANT SIGN MA

Sign

1A60	၁	TAI THAM SIGN SAKOT

Dependent vowel signs

1A61	၁	TAI THAM VOWEL SIGN A
1A62	၁	TAI THAM VOWEL SIGN MAI SAT
1A63	၁	TAI THAM VOWEL SIGN AA
1A64	၁	TAI THAM VOWEL SIGN TALL AA
1A65	၁	TAI THAM VOWEL SIGN I
1A66	၁	TAI THAM VOWEL SIGN II
1A67	၁	TAI THAM VOWEL SIGN UE
1A68	၁	TAI THAM VOWEL SIGN UUE
1A69	၁	TAI THAM VOWEL SIGN U
1A6A	၁	TAI THAM VOWEL SIGN UU
1A6B	၁	TAI THAM VOWEL SIGN O
1A6C	၁	TAI THAM VOWEL SIGN OA BELOW
1A6D	၁	TAI THAM VOWEL SIGN OY
1A6E	၁	TAI THAM VOWEL SIGN E
1A6F	၁	TAI THAM VOWEL SIGN AE
1A70	၁	TAI THAM VOWEL SIGN OO
1A71	၁	TAI THAM VOWEL SIGN AI
1A72	၁	TAI THAM VOWEL SIGN THAM AI
1A73	၁	TAI THAM VOWEL SIGN OA ABOVE
1A74	၁	TAI THAM SIGN MAI KANG

Tone marks and other marks

1A75	၁	TAI THAM SIGN TONE-1
1A76	၁	TAI THAM SIGN TONE-2
1A77	၁	TAI THAM SIGN KHUEN TONE-3
1A78	၁	TAI THAM SIGN KHUEN TONE-4
1A79	၁	TAI THAM SIGN KHUEN TONE-5
1A7A	၁	TAI THAM SIGN RA HAAM
1A7B	၁	TAI THAM SIGN MAI SAM
1A7C	၁	TAI THAM SIGN KHUEN-LUE KARAN
1A7D	▨	<reserved>
1A7E	▨	<reserved>
1A7F	၁	TAI THAM COMBINING CRYPTOGRAMMIC DOT

Hora digits

1A80	၀	TAI THAM HORA DIGIT ZERO
1A81	၁	TAI THAM HORA DIGIT ONE
1A82	၂	TAI THAM HORA DIGIT TWO
1A83	၃	TAI THAM HORA DIGIT THREE
1A84	၄	TAI THAM HORA DIGIT FOUR
1A85	၅	TAI THAM HORA DIGIT FIVE
1A86	၆	TAI THAM HORA DIGIT SIX

1A87 ꘑ TAI THAM HORA DIGIT SEVEN
1A88 ꘒ TAI THAM HORA DIGIT EIGHT
1A89 ꘓ TAI THAM HORA DIGIT NINE

Tham digits

1A90 ꘐ TAI THAM THAM DIGIT ZERO
1A91 ꘑ TAI THAM THAM DIGIT ONE
1A92 ꘒ TAI THAM THAM DIGIT TWO
1A93 ꘓ TAI THAM THAM DIGIT THREE
1A94 ꘔ TAI THAM THAM DIGIT FOUR
1A95 ꘕ TAI THAM THAM DIGIT FIVE
1A96 ꘖ TAI THAM THAM DIGIT SIX
1A97 ꘗ TAI THAM THAM DIGIT SEVEN
1A98 ꘘ TAI THAM THAM DIGIT EIGHT
1A99 ꘙ TAI THAM THAM DIGIT NINE

Punctuation

1AA0 ⊕ TAI THAM SIGN WIANG
1AA1 ⊕ TAI THAM SIGN WIANGWAAK
1AA2 ꙮ TAI THAM SIGN SAWAN
1AA3 ◈ TAI THAM SIGN KEOW
1AA4 @ TAI THAM SIGN HOY
1AA5 ꕥ TAI THAM SIGN DOKMAI
1AA6 ꙅ TAI THAM SIGN REVERSED ROTATED RANA
1AA7 ꙷ TAI THAM SIGN MAI YAMOK
1AA8 ꙾ TAI THAM SIGN KAAN
1AA9 ꙿ TAI THAM SIGN KAANKUU
1AAA ꙸ TAI THAM SIGN SATKAAN
1AAB ꙹ TAI THAM SIGN SATKAANKUU
1AAC ꙺ TAI THAM SIGN HANG
1AAD ꙻ TAI THAM SIGN CAANG