

# Local Language Computing Standards: Status and Current Work

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# Lao Character Set

- The Lao alphabet has 33 consonant letters including of 27 single consonants and 6 mixed consonants.

ກ ຂ ຄ ງ ຈ ຊ ຍ ດ ຕ ຖ ບ ປ ຜ ຝ ພ ັ ມ  
ຢ ຣ ລ ຫ ອ ຮ ວ ສ ທ ນ

ຫ + ງ = ຫງ

ຫ + ຍ = ຫຍ

ຫ + ວ = ຫວ

ຫ + ລ = ຫລ or ຫຼ

ຫ + ນ = ຫນ

ຫ + ມ = ຫມ



# Lao Character Set (Cont.)

- There are many Lao Character set, but it can be divided into 3 groups:
  - Upper ASCII structure
    - simple technology by replacement of English glyphs with Lao character glyph and using codes for English characters to write Lao text.
    - Need to switching font for mixing text Lao-English
  - Lower ASCII structure
    - To solve the problem of mixed Lao-English text with same font without having trouble to repeatedly change the font
    - It is require add-on software or some programming application in order to executed all those characters

# Lao Unicode structure

The Lao Unicode code table is composed of 65 symbols with almost existed in Lao language:

- 27 Single consonants
- 03 mixed consonants
- 18 Single vowels
- 04 Tone marks
- 03 Special symbols and
- 10 Lao digits

	0E8	0E9	0EA	0EB	0EC	0ED	0EE	0EF
0				ໂ	ໄ	໐		
1	ກ		ມ	ປ	ແ	໑		
2	ຂ		ຢ	ຯ	ໂ	໒		
3			ຮ	ຳ	ໃ	໓		
4	ຄ	ດ		ອ	ໄ	໔		
5		ຕ	ລ	ົ		໕		
6		ຖ		ອ	ງ	໖		
7	ງ	ທ	ວ	ົ		ກ		
8	ຈ			ູ	ົ	ຂ		
9		ນ		ູ	ົ	ລ		
A	ຊ	ບ	ສ		ົ			
B		ປ	ຫ	ົ	ົ			
C		ຜ		ົ	ົ	ໝ		
D	ຍ	ຝ	ອ	ົ	ົ	ໝ		
E		ພ	ຮ					
F		ຟ	ຮ					

# Lao Font

- There are many Lao font
  - Sethatirad OT(Official font)
  - Saysettha OT
  - Saysettha Lao
  - Alice
  - HongKad

# Lao Script Standardization

- There are about 140 different non-Unicode font and their versions exist for Lao language
- All fonts have different custom encodings. It make the conversion process difficult and slow
- In 1<sup>st</sup> step these fonts are categories into 46 different groups according to the encoding they used.
  - 46 mapping tables are defined for converting non-Unicode encoding to Unicode
  - These 46 groups are further reduced to 24 groups after taking the union of mapping tables

# Mapping table

- Mapping tables are simple text files with the following format
  - NON-UNICODE ENCODING:UNICODE

Example:

005C:0EDD

005B:0E9A

59:0EB4+0EC9

57:0ED0

55:0EB5+0EC9

# Font Group Table

- This table identifies the group of a particular font and associate it with the corresponding mapping table
- The format of a Group Table is:
  - Source font = target font = size fector = map table

# Lao Keyboard

- The Lao language is composed of 65 unit characters and signs which contained 27 characters of single consonants, 06 mixed consonants characters, 14 single vowels characters, 04 tone marks characters, 03 special symbols characters and 10 characters of Lao digit numbers

# Lao Keyboard (Cont.)

- Usually the number of characters in the Keyboard is equal with the number of character set in the internal code table. However some keyboard layout might have grater or lesser numbers then internal code table. The following table is representing on how developers coding the characters:

Option	Hand writing	Keyboard	Character set
1	$\overset{\sim}{X} = \overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X} + \overset{\sim}{x}$
2	$\overset{\sim}{X} = \overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X}$	$\overset{\sim}{X} + \overset{\sim}{x}$
3	$\overset{\sim}{X} = \overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X}$
4	$\overset{\sim}{X} = \overset{\sim}{X} + \overset{\sim}{x}$	$\overset{\sim}{X}$	$\overset{\sim}{X}$

# Lao Keyboard (Cont.)





# Lao Mobile phone Keyboard

Key	Character
1	. , - ? ! ' @ : # \$ / _ 1 ກ ຂ ຄ ອ ະ ັ
2	A B C 2 ງ ຈ ສ ດ ອ ັ ອ ື
3	D E F 3 ຊ ດ ຍ ວ ື ື
4	G H I 4 ຕ ຖ ທ ຜ ື ື
5	J K L 5 ນ ບ ປ ຜ ັ ັ ັ ັ ັ ັ
6	M N O 6 ຜ ຝ ພ ພ ຸ ຸ ຸ
7	P O R S 7 ພ ມ ຢ ກ ເ ແ
8	T U V 8 ລ ຣ ວ ຕ ໄ ້ ຈ ຯ
9	W X Y Z 9 ຫ ອ ຮ ສ ໃ ໄ ຫ
0	Zero space and ັ ັ 0
Key *	symbol
Key #	Switch keyboard layout

THANK YOU