Dated: July 29, 2003

**Title:** Proposal to add Tamil grantha character SHA

Source: International Forum for Information Technology in Tamil (INFITT)

Action: For consideration by UTC and ISO/IEC JTC 1/SC 2/WG 2

Distribution: ISO/IEC JTC 1/SC 2/WG 2 members and Liaison organizations

### 1. Introduction

Currently Unicode Tamil range does not include the Tamil grantha[1] character SHA. This document proposes addition of this character in Unicode character set, within the current Tamil range U+0B80 to U+0BFF.

ISO/IEC JTC 1/SC 2/WG 2 Proposal summary form N2352-F accompanies this document.

# 1.1. Character proposed in this document

Shape of proposed character	Proposed name	Position
ശ	TAMIL LETTER SHA	0BB6

### 1.2. About INFITT and INFITT WG02

International Forum for Information Technology in Tamil (INFITT) is a non-governmental organization, with cooperation from various state and national governments in the Tamil speaking countries. It also has participation from industry representatives and individuals with expertise in Information Technology and Tamil language.

Working Group 2 (WG02) of INFITT deals with definition and implemenation of Unicode in Tamil. WG02 also has a Liaison relationship with Unicode Consortium. Members of this working group are derived from various nations around the world, and represent interests of IT industry, governments, Tamil scholars, educators and other Tamil IT enthusiasts. This proposal has been prepared with the consensus of members of this working group.

# 1.3. Demographics

Tamil is the state language of the state of Tamil Nadu in India. It is also a national language in Sri Lanka and Singapore (Source: CIA World Factbook - <a href="http://www.cia.gov/cia/publications/factbook/index.html">http://www.cia.gov/cia/publications/factbook/index.html</a>).

Total population of Tamil speakers around the world is estimated to be around 74 million (1999 estimate) as per the Ethnologue index prepared by Summer Institute of Linguistics. See the Ethonologue page for Tamil <a href="http://www.ethnologue.com/show\_language.asp?code=TCV">http://www.ethnologue.com/show\_language.asp?code=TCV</a> which provides details about the population and distribution of Tamil diaspora.

### 2. TAMIL LETTER SHA

This document proposes to encode Tamil grantha character SHA in unicode Tamil range at U+0BB6.

### 2.1. Usage of Tamil letter SHA

Devanagari and other indian scripts have a character named SHA in their Unicode block. However in Tamil the corresponding slot is left vacant. While not in popular use, there does exist a character for letter SHA in Tamil. This document proposes to add Tamil letter SHA in Unicode Tamil range at U+0BB6.

American Library Association-Library of Congress (ALA-LC) Romanization scheme includes this character in their list. (<a href="http://lcweb.loc.gov/catdir/cpso/romanization/tamil.pdf">http://lcweb.loc.gov/catdir/cpso/romanization/tamil.pdf</a>)

Digital South Asia Library of Univ of Chicago and other American Universities also use the same ALA-LC scheme that recognizes this "sa" as one of the grantha characters repertoire. (http://www.lib.uchicago.edu/e/su/southasia/transliteration-tamil.html)

See also "Transliteration of Indic scripts; How to use ISO 15919", (<a href="http://homepage.ntlworld.com/stone-catend/trind.htm">http://homepage.ntlworld.com/stone-catend/trind.htm</a>) Table 3, shown as example 5 under section 3.

# 2.2. Data Processing for SHA

SHA behaves similar to other Tamil grantha letters, when combined with vowel signs. Specifically, U and UU vowels signs for SHA are similar to other grantha letters. In terms of other Unicode properties, the proposed character has properties same as U+0BB8 (TAMIL LETTER SA).

SHA is usually sorted after the Tamil letter NNNA and before all the grantha characters. However, minor differences might exist in this behaviour between various sort orders.

Inclusion of character SHA in Tamil range will also help in transliteration from other indic scripts into Tamil.

# 2.3. Ligature SRI[2]

While the base character SHA is not widely used in modern literature and communications, its ligature form SRI is used widely. The character sequence of SRI is as below:

```
Proposed TAMIL LETTER SHA
TAMIL LETTER RA (U+0BB0)
TAMIL VOWEL SIGN II (U+0BC0)
```

This usage corrensponds with the sequence of SRI in other indic scripts.

Current implementations of unicode define SRI in Tamil as follows:

```
TAMIL LETTER SA (U+OBB8) +
TAMIL LETTER RA (U+OBB0) +
TAMIL VOWEL SIGN II (U+OBC0)
```

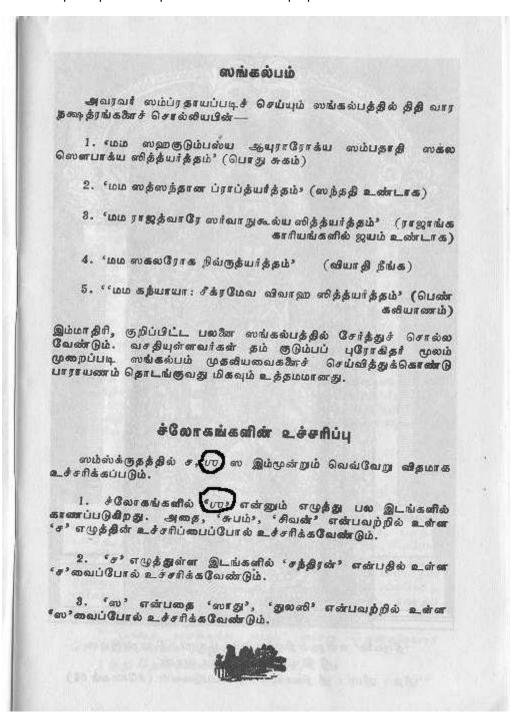
This is incorrect combination of SRI. This error is due to lack of TAMIL LETTER SHA in current unicode repertoire.

Proposed character SHA may also form various other ligatures in combination with MA, YA, RA, and VA. However, these ligatures are archaic and are not widely recognized. Contemporary publications only use disjoint forms.

# 3. Published Usage Examples

#### **Example 1: Pronounciation of SHA**

This example explains the pronounciation of the proposed character SHA.



# **Example 2: Transliteration of SHA**

This example gives the transliteration of proposed character SHA in Devanagari.

		1	மைல்கிருத	தெலுங்கு	
	ா கால அடையாளங்களின்	1 18	உச்சரிப்புக்கம்		
தா	ர கால அம்படமாள்		காட்டும் எ		
	விபரங்கள்		有西	u 5.	
			ख क,	न का	
	නැරත?	nin l	ग कु	d n	
காலங்க	्रोत च्या चित्रक क्षेत्र का क्षेत्रक क्षेत्र का क्षेत्रक क्षेत्रक क्षेत्रक क्षेत्रक क्षेत्रक क्षेत्रक क्षेत्रक विकार	710	च क.	Ф U <sub>2</sub>	
	(1)		த க	ब u <sub>3</sub>	
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2. 000			15 F.	<b>म</b> w	
3. 600		SERVICE TO THE	ज 🧝	可叫	
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m 557,	வுக்குக் கால்றிறா	I marine and it	₹ L.	स en	
300000000000000000000000000000000000000	இக்கப் புள்ளிகள் சைஹித்யங்களி	ல் வரும்	म् स्थ्य	£ 94	
	இத்தப் புள்ளனை மக்கூடி		त 🔊	ळव	
antingia	துக்குப் புள்ளம். ஸ்ரீக்கு அடையாளம்.		य 🚜 .	क्ष व	
_	து கமகமாகப் பாடும் அடையாளம்		द 🔊 .		
	(ச = ரி) சத்த ரிஷபம் (ச = ரி) *சதுச்ருதி ரிஷபம் (ஷ = ரி) ஷட்ச்ருதி ரிஷபம் (க = சா) சுத்த காத்தாரம் (ரை = கா) சைத்த காத்தாரம் (ரை = கா) அந்தர காத்தாரம் (அ = கா) அந்தர காத்தாரம் (ச = ம) சுத்த மத்யமம் (ப்ரதி = ம) ப்ரதி மத்யமம் சதுச்ருதி தைவத்தை பஞ்சச்ருதி வ	(ஷ = (க = ம் (கா -தே: அவ	; அவரோஹண	தைவதம் நாதம் நாதம் நாதம் ம். கூதிர்பைய்	
N.B.—			0		

#### **Example 3: Shankarar**

Name of Shankarar is spelt with this proposed SHA. The trasnliteration of the verse also uses SHA.

2. ஸ்ரீஸுங்கரரின் விநயபாவம்-ஸுப்ரஹ்மண்யோபாஸநம் மஹாபாண்டித்யத்தை அடையஹேது

न जानामि शब्दं न जानामि चार्थं न जानामि पद्यं न जानामि गद्यम् । चिदेका पडास्या हृदि द्योतते मे मुखान्निस्सरन्ते गिरश्चापि चित्रम

11 7 1

ந ஜாநாமி (ருப்தம் ந ஜாநாமி சார்த்தம் ந ஜாநாமி பத்யம் ந ஜாநாமி கத்யம் சிதேகா ஷடாஸ்யா ஹ்ருதி த்யோததே மே முகாந்நிஸ்ஸரந்தே கிருழ்சாபி சித்ரம்

### INSPIRATIONS OF ACHARYA

I know not Sabda, I know not Artha, I know not Padyam, I know not Gadyam.

But there shines in My Hrudayam six faced luminous light, Brilliant words flow out from my mouth extempore

நான் சப்தத்தை அறிந்தவனல்ல; பொருளேயும் அறிந்த வனல்ல; நான்குவிதமான பதங்களோடுகூடின ச்லோகத் தையும் அறிந்தவனல்ல; சூர்ணிகைகளேயும் அறிந்தவ னல்ல; என்னுடைய மனதில் ஒரு ஒளியானது ஆறுமுகத் தோடு கூடினதாய்க்கொண்டு ப்ரகாசித்துக்கொண்டிருக்கி றது. அக்காரணத்தால் என்னுடைய முகத்தினின்றும் ஆசர்யமான வாக் விலாஸங்களும், வெளியில் வந்து ப்ரக சிக்கின்றன.

16

# Example 4: Vishnu sahasranaamam

First verse of Vishnu sahasranaamam uses SHA in several places.

ளு வஷ	ணு ஸஹஸ்ரநாம ஸ்தே	ாதரம
	-310	
	1*	
	ஹரி : ஓம்	
<i>ப</i> ுக்லாம்பரது ப்ரஸந்நவதநம்	ரம் விஷ்ணும் <b>முഗு∂்வர்ணம் சதுர்</b> ப்புஜ <b>ம்  </b> த்யாயேத் ஸர்வவிக்தோப∪ுர <b>ந்தயே</b>	
யஸ்ய த்விரதவ விக்நம் நிக்நந்	யக்த்ராத்யா : பாரிஷத்யா : பரஸ்முதம்   தி ஸததம் விஷ்வக்கு நேம் தமா√ரரியே	
வ்யாஸம் வணி பரா <i>ம</i> ராத்மஜ	ஷ்டநப்தாரம் ஸக்தே : பௌத்ரமகல்மஷம ம் வந்தே <i>ஶ</i> ுகதாதம் <b>தபோ</b> நிதிம்	ò!
வ்யாஸாய விவ் நமோ வை ப்ர	த்ணுருபாய வ்யாஸரூபாய வீஷ்ணவே ! ஹ்மநிதயே வாஸிஷ்டாய நமோ நம்:∥	
அவிகாராய ம ஸதைகரூபரூட	ுத்தாய நித்யாய பரமாத்மநே  பாய விஷ்ணவே ஸர்வ ஜிஷ்ணவே ▮	
யஸ்ய ஸ்மரண விமுச்யதே நட	rமாத்ரேண ஜன்மஸம்ஸாரபந்தநாத்   மஸ்தஸ்மை விஷ்ணவே ப்ரபனிஷ்ணவே	l services
	ஓம் தமோ விஷ்ணவே ப்ரபவிஷ்ணவே	

# **Example 5: Transliteration of Indic Scripts: How to use ISO 15919**

Translateration of proposed character SHA is shown as "s<acute>a" in the table below.

Latin	Dev.	Gur.	Guj.	Ben.	Ori.	Tam.	Mal.	Kan.	Tel.	Sin.	Notes
pa	ч	ਪ	પ	প	ପ	Ц	പ	ಪ	వ	0	
pha	फ	ਫ	ş	ফ	ග		ഫ	इ	\$	లి	
ba	ब	ਬ	બ	ব	ବ		ബ	ಬ	ಬ	බ	
bha	भ	ਭ	ભ	ভ	ଭ		B	걻	భ	හ	
ma	म	ਮ	મ	ম	ก	ம	22)	ಮ	మ	9	
m̃ba										ඔ	9.
ŗa	(₹)					р	n	(69)	(69)	(ర.)	10.
ţa							( <u>L</u> g_)				
na	(न)					ன	(ഩ)			(න.)	
ļa	(क)					ழ	φ	(ප)	(ca)	(e.)	
ya	य	ਯ	ય	ਧ	ญ	ш	00)	ಯ	య	ය	
у̀а	(깊)			য়	ญุ						11.
ra	₹	ਰ	5	র (ৰ)	ର	σ	0	ਰ	ŏ	ර	
ř	U	Die:		100000000000000000000000000000000000000	10.00						
la	ल	ਲ	લ	ल	ଲ	බ	ല	ව	ಲ	e	
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va	व	\$	q	(ৱ)	(ବ)	ഖ	വ	ಪ	వ	Ð	
śa	য়	ਸ਼	શ	শ	ଶ	(00)	ശ	ਭ	ৰ্	အ	
șa	ष		ø	ষ	ଷ	(ഐ)	uaq	귏	ష	ෂ	
sa	स	Ħ	સ	স	ସ	(ബ)	സ	ಸ	వ	ස	
ha	ह	ਹ	ě	হ	ହ	(ஹ)	ഹ	ळ	హ	හ	
,	2		5	3	{		5	O <sub>2</sub>	5		
qa	क्र	ਕ	ક્	কৃ							
<u>kh</u> a	ख़	.ਖ	ખ્	খ							
ġa	ग	.ਗ	οľ	গ							
za	ল	ਜ਼	٩	জ				జ్ఞ	ಪ		
fa	फ	छ	Ş.	ফৃ				ಫ಼		8	
wa				র	g						

### **Example 6: Ligature SRI**

This wedding invitation contains the letter SRI (also transliterated in English as SHRI or SHREE).



### Notes:

### [1] Grantha

Grantha characters are part of Tamil script. Historically these characters are not considered to be part of proper Tamil Language, but are used to write non-Tamil words and names. These were first introduced by rulers of Pallava dynasty during 6-7th centuries A.D. These characters are widely used by Tamils in Indian subcontinent and the Tamil diaspora in other countries.

### [2] Sri

Also written as SHRI or SHREE. Sri in Sanskrit means wealth. Hindu goddess of wealth is called "SRIDEVI". The prefix SRI is often added to many gods and goddesses and also while formally addressing elders.

### ISO/IEC JTC 1/SC 2/WG 2

# PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646

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

(Please read Principles and Procedures Document for guidelines and details before filling this form.)

See <a href="http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html">http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html</a> for latest Form.

See <a href="http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html">http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html</a> for latest Principles and Procedures document.

See <a href="http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html">http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html</a> for latest roadmaps.

(Form number: N2352-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09)

### A. Administrative

1.	Title:Addition of Tamil character SHA	_
2.	Requester's name: _International Forum for Information Technological Tamil (INFITT)	ogy
4. 5.	Requester type (Member body/Liaison/Individual contribution):	003-03-10
'		YES

#### **B.** Technical - General

1. (Choose one of the following:) a. This proposal is for a new script (set of characters):	NO
Proposed name of script:	
b. The proposal is for addition of character(s) to an existin Name of the existing block: Tamil Range: 0B80-0BFF	
2. Number of characters in proposal:	1
3. Proposed category (see section II, Character Categories):	7
4. Proposed Level of Implementation (1, 2 or 3)	A
(see clause 14, ISO/IEC 10646-1: 2000):	1
Is a rationale provided for the choice?	 YES
If Yes, reference:See attached proposal	1EB
5. Is a repertoire including character names provided?	YES
a. If Yes, are the names in accordance with the 'character na	
quidelines in Annex L of ISO/IEC 10646-1: 2000?	YES
b. Are the character shapes attached in a legible form suitab	
b. Are the character shapes attached in a regible form surtab	YES
6. Who will provide the appropriate computerized font (ordered	
True Type, or PostScript format) for publishing the standard	brererence:
	. <b>.</b>
Mr.Muthu Nedumaran (muthu@murasu.com)	44
If available now, identify source(s) for the font (include a	.aaress,
e-mail, ftp-site, etc.) and indicate the tools used:	
7. References:	<del></del>
a. Are references (to other character sets, dictionaries, des	
texts etc.) provided?	YES
b. Are published examples of use (such as samples from newspa	
magazines, or other sources) of proposed characters attach	.ea?YES
8. Special encoding issues:	
Does the proposal address other aspects of character data pro	
(if applicable) such as input, presentation, sorting, search	.ing, indexing,

transliteration etc. (if yes please enclose information)?YES. See attached proposal
9. 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/Public/UNIDATA/UnicodeCharacterDatabase.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

	Has this proposal for addition of character(s) been submitte	d before? _NO_
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?INFITT WG02	
	proposal	
3.	Information on the user community for the proposed character	
	(for example: size, demographics, information technology use	
	publishing use) is included?	YES
١.	Reference:See section 1.3 of attached proposal	
4.	The context of use for the proposed characters (type of use;	
		Common
L	Reference:See attached proposal	
5.	Are the proposed characters in current use by the user commu If YES, where? Reference:See attached proposal	nity?YES
6	After giving due considerations to the principles in <i>Princip</i>	log and
٥.	Procedures document (a WG 2 standing document) must the prop	
	characters be entirely in the BMP?	YES
	If YES, is a rationale provided?	YES
	If YES, reference:See section 2.1 of attached proposal	1E5
7	Should the proposed characters be kept together in a contigu	Ous range
′ ˙	(rather than being scattered)?	YES
8.	Can any of the proposed characters be considered a presentat	
	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 compos	ed character
	sequence of either existing characters or other proposed cha	
	If YES, is a rationale for its inclusion provided?	
	If YES, reference:	
10	. Can any of the proposed character(s) be considered to be si	milar (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/o	r use of
	composite sequences (see clauses 4.12 and 4.14	
	in ISO/IEC 10646-1: 2000)?	YES
	If YES, is a rationale for such use provided?	YES
	If YES, reference:See attached proposal section 2.3	
	Is a list of composite sequences and their corresponding gly	
		YES
1 ^	If YES, reference:See section 2.3 and example 6	
12	. Does the proposal contain characters with any special prope	rties such as

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:

# A.1 Submitter's Responsibilities

The national body or liaison organization (or any other organization or an individual) proposing new character(s) or a new script shall provide:

- 1. Proposed category for the script or character(s), character name(s), and description of usage.
- 2. Justification for the category and name(s).
- 3. A representative glyph(s) image on paper: If the proposed glyph image is similar to a glyph image of a previously encoded ISO/IEC 10646 character, then additional justification for encoding the new character shall be provided.
  Note: Any proposal that suggests that one or more of such variant forms is actually a distinct character requiring separate encoding, should provide detailed, printed evidence that there is actual, contrastive use of the variant form(s). It is insufficient for a proposal to claim a requirement to encode as characters in the Standard, glyphic forms which happen to occur in another character encoding that did not follow the Character-Glyph Model that guides the choice of appropriate characters for encoding in ISO/IEC 10646.

**Note:** WG 2 has resolved in Resolution M38.12 not to add any more Arabic presentation forms to the standard and suggests users to employ appropriate input methods, rendering and font technologies to meet the user requirements.

- 4. Mappings to accepted sources, for example, other standards, dictionaries, accessible published materials.
- 5. Computerized/camera-ready font: Prior to the preparation of the final text of the next amendment or version of the standard a suitable computerized font (camera-ready font) will be needed. Camera-ready copy is mandatory for final text of any pDAMs before the next revision. Ordered preference of the fonts is True Type or PostScript format. The minimum design resolution for the font is 96 by 96 dots matrix, for presentation at or near 22 points in print size.
- 6. List of all the parties consulted.
- 7. Equivalent glyph images: If the submission intends using composite sequences of proposed or existing combining and non-combining characters, a list consisting of each composite sequence and its corresponding glyph image shall be provided to better understand the intended use.
- 8. Compatibility equivalents:

  If the submission includes compatibility ideographic characters, identify the equivalent unified CJK Ideograph character(s).
- 9. Any additional information that will assist in correct understanding of the different characteristics and linguistic processing of the proposed character(s) or script.