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Universal Multiple-Octet Coded Character Set
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Title: **Final revised proposal to encode the Saurashtra script in the UCS**
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Introduction

Saurashtra is an Indo-European language, related to Gujarati and spoken by about 310,000 people (1997 India Missions Association) in southern India, mostly in the area around Madurai, Salem, and Thanjavur cities. The SIL *Ethnologue* describes it as "an Indo-European island surrounded by Dravidian languages". Since the end of the 19th century the Telugu, Tamil, Devanagari, and Saurashtra scripts have been used to publish books in Saurashtra. At present, Saurashtra is most often written in the Tamil script, augmented with the use of superscript digits and a colon to indicate sounds not available in the Tamil script. The Saurashtra script is of the Brahmic type; early Saurashtra text makes use of conjuncts, which can be handled with the usual Brahmic shaping rules. The modern version, developed in the 1880s, has undergone some simplification. Like Tamil, modern Saurashtra does not use complex consonant clusters, marking instead the killed vowel with a visible subscript virama; 𑢹𑣿 *ka* is formed of KA + VIRAMA. An exception to this is the conjunct 𑢺 *kṣa*, which is formed of KA + VIRAMA + ZWJ + SSA in this encoding, and which is sorted as a unique letter in older dictionaries. Because, apart from *kṣa*, the virama is always visible in modern Saurashtra, it is best to encode modern Saurashtra with the virama visible by default, and to use ZERO WIDTH JOINER to force conjunct behaviour. Thus this encoding supports both older and newer Saurashtra text. A keyboard specification may make it easy to type 𑢺 *kṣa* with a single keystroke comprising all four characters KA + VIRAMA + ZWJ + SSA.

Glyph placement

The vowel signs in Saurashtra follow the consonant to which they are applied. The vowels *-i* and *-ī*, however, are typographically joined to the top right corner of their consonant. Examples: 𑢹 *ka* + ◌𑣿 *-i* = 𑢹𑣿 *ki* (not 𑢹𑣿), 𑢹 *ka* + ◌𑣾 *-ī* = 𑢹𑣾 *kī* (not 𑢹𑣾), and 𑢼 *ṭa* + ◌𑣿 *-i* = 𑢼𑣿 *ṭi* (not 𑢼𑣿), 𑢼 *ṭa* + ◌𑣾 *-ī* = 𑢼𑣾 *ṭī* (not 𑢼𑣾). Vowel matras are also applied to the UPAKSHARA (see below).

Digits and punctuation

Digits have distinctive forms. In the samples viewed at present, European COMMA, FULL STOP, and QUESTION MARK are used, most commonly. Both SAURASHTRA DANDA and SAURASHTRA DOUBLE DANDA are used in poetry; SAURASHTRA DANDA is also used in prose.

Glyph variants

The shape of the vowel signs for *-ḷ* and *-ḹ* is noteworthy. In one teaching book it appears that full-size glyphs are used, with a tilde-like mark beneath indicating the long vowel: 𑢹𑣰 *kḷ*, 𑢹𑣱 *kḹ* (compare 𑢹𑣲 *kṛ* and 𑢹𑣳 *kṝ*). In earlier sources, however, the glyph for *-ḷ* is reduced, and length is

marked with *-ā*; the *Sangudhari* font supports this practice: 𑢹𑣁 *kḷ*, 𑢹𑣁𑣗 *kḹ* (compare *Sangudhari* 𑢹𑣂 *kṛ* and 𑢹𑣃 *kṝ*).

Saurashtra UPAKSHARA

A character 𑢺 called UPAKSHARA, which we transliterate *H* here, is unique to Saurashtra, and does not have an equivalent in the Devanagari, Tamil, or Telugu scripts. It functions in some regards like the Tamil *āytam*, in that is used to modify other letters to represent sounds not found in the basic Brahmic alphabet. It differs from *āytam* because it is a dependent consonant—a kind of consonant matra. In Figure 7, a chart from *Bhāṣābhimāni*, four Saurashtra letters are shown in combination with the UPAKSHARA: 𑢫𑢺 *rH,* 𑢬𑢺 *lH,* 𑢮𑢺 *mH,* 𑢯𑢺 *nH*. In this chart, the visible VIRAMA is drawn below the liquids and nasals and before the UPAKSHARA, though in the encoding, it is, for example, RA + UPAKSHARA + VIRAMA. (In that same chart, the Tamil letters are shown with the Tamil *pulli* on two lettters: ர்ஹ் *rh,* ல்ஹ் *lh,* ம்ஹ் *mh,* ந்ஹ் *nh*., a different transliteration and encoding model; here we have RA + VIRAMA + HA + VIRAMA.) Since in running text the visible virama is not shown, it is clear that the UPAKSHARA modifies the consonant as a whole. The related language Marathi also has aspirated liquids and nasal such as these, which are shown as conjuncts with *ha*: ऱ्ह *rha*, ल्ह *lha*, म्ह *mha*, न्ह *nha*—a different model again. Saurashtra UPAKSHARA functions as an dependent consonant sign, also taking the dependent vowel when used. Here is a the vowel repertoire in Saurashtra, Latin, and Tamil:

𑢮𑢺	𑢮𑢺	𑢮𑢺𑢰	𑢮𑢺𑢱	𑢮𑢺𑢲	𑢮𑢺𑢳	𑢮𑢺𑢴	𑢮𑢺𑢵	𑢮𑢺𑢶	𑢮𑢺𑢷	𑢮𑢺𑢸	𑢮𑢺𑢹	𑢮𑢺𑢺
mH	*mHa*	*mHā*	*mHi*	*mHī*	*mHu*	*mHū*	*mHĕ*	*mHe*	*mHai*	*mHŏ*	*mHo*	*mHau*
ம்:	ம:	மா:	மி:	மீ:	மு:	மூ:	மெ:	மே:	மை:	மொ:	மோ:	மௌ:

In the publication *Padārthun*, the words 𑢯𑢰𑢯 *nHāna* and 𑢯𑢲𑢯 *nHīna* are transliterated into Tamil-based orthography as நா:ந *nā:na* and நீ:ந *nī:na*. 𑢮𑢺𑢫 *mHor* and 𑢯𑢺𑢯𑢸 *nHannŏ* are transliterated as மோ:ர் *mo:r* and ந:ந்நொ *na:nnŏ*. The colon-like mark is used also in Tamil transliterations of this letter in *Bhāṣābhimāni*, where 𑢯𑢲𑢡𑢡 *nHīttak* is written நீ:த்தக் *nī:ttak*. This colon-like mark is not encoded in the Tamil block; one could consider it a new sort of VISARGA, perhaps. Another example of a word written with the UPAKSHARA is 𑢯𑢲𑢯𑢸 *nHīnāv*. The Tamil transliteration given is நி:நாவ் *nHināv*, apparently with the wrong vowel in the first syllable, and with the colon-like mark. The Tamil translation given is வழுக்கை *vaẕakkai* 'bald'. The Hindi word for this is given (in Tamil script!) as க^{3}ஞ்ஜா *ka³ñjā*, i.e., *gañjā* 'bald'. In L2/03-256 Ka'ōnohi Kai has suggested that the aspirates be encoded as digraphs, but this seems unnecessary. In some implementations, considerable space can be seen between the liquid or nasal and the UPAKSHARA, but this is probably an artifact of font technology.

In a document in 2003 (L2/03-277), Peri Bhaskararao suggested that the UPAKSHARA could be analyzed as a combining form of HA. No additional information in support of that position has been provided to overturn the analysis we have given above. Though the chart in *Bhāṣābhimāni* (shown in Figure 7) gives ர்ஹ் *rh* as the killed Tamil equivalent to Saurashtra 𑢫𑢺 *rH,* transliterations elsewhere would suggest ர்: *rH*. For Saurashtra to be equivalent to ர்ஹ் *rh*, we might expect to see 𑢫𑢻 *rh*, that is, killed *ra* + killed *ha*. The equivalent Devanagari sequence would be र्ह् *rh* with two viramas. We believe that the evidence suggests that 𑢫𑢺 *rH* (with killed vowel) and 𑢫𑢻 *rha* (without killed vowel, equivalent to ह्र *rha*) would be distinct in the Saurashtra script. Consider the following transliteration opportunity. A Sanskrit phrase ஓம் ஸிம்ஹ கணபதயே நமஹ *Om simha Kaṇapataye namaha* appears in Tamil script on a web page at **http://sripambattisiddhar.com/tamil/poojai/vinayaga.htm**; note the consonant cluster ம்ஹ *mha*. In Saurashtra this could be

written ꢒꣂ ꢱꢵꢬ ꢜꢡꢰꢡꢜ ꢠꢵꢃ *Oṁ simha Gaṇapataye namaḥ*, assuming that Sanskrit *mha* is not the aspirate *mʜa*. Contrast this with the pair ꢥ꣄ꢘ *mu꣄ri* and ꢵꢳꢱ *mʜuri*—both examples from *Bhāṣābhimāni*. (We are aware that this argument would be stronger if we had an actual *pūja* text in Saurashtran script to show the transliteration practice for Sanskrit.) In any case, now, in 2005, we reiterate our proposal for UPAKSHARA to be encoded as a unique Saurashtran character.

Conjunct characters

As noted above, the virama is by default visible in Saurashtra, and ZWJ is added to force a conjunct; ZWNJ will also force a visible virama:

ꢐ KA + ◌꣄ + ꢲ SSA = ꢐ꣄ꢲ *kṣa*
ꢐ KA + ◌꣄ + ZWJ + ꢲ SSA = ꢩ *kṣa*
ꢐ KA + ◌꣄ + ZWNJ + ꢲ SSA = ꢐ꣄ꢲ *kṣa*

Older Saurashtra texts have not been available to us, but the following conjunct forms are known as attested in Figure 2 below:

ꢱ SHA + ◌꣄ + ꢯ RA = ꢱ꣄ꢯ *śra*
ꢱ SHA + ◌꣄ + ZWJ + ꢯ RA = ꢪ *śra*

ꢲ SSA + ◌꣄ + ꢭ TTHA = ꢲ꣄ꢭ *ṣṭha*
ꢲ SSA + ◌꣄ + ZWJ + ꢭ TTHA = ꢲ꣄ *ṣṭha*

ꢒ TA + ◌꣄ + ꢴ YA = ꢒ꣄ꢴ *tya*
ꢒ TA + ◌꣄ + ZWJ + ꢴ YA = ꢫ *tya*

ꢲ SSA + ◌꣄ + ꢬ TTA + ◌꣄ + ꢯ RA = ꢲ꣄ꢬ꣄ꢯ *ṣṭra*
ꢲ SSA + ◌꣄ + ZWJ + ꢬ TTA + ◌꣄ + ZWJ + ꢯ RA = ꢪ꣄ *ṣṭra*

An implementation of older Saurasthra will entail further study as to the specific consonant clusters used.

Implementations

Ka‘ōnohi Kai implemented Saurashtra for Mac OS X 10.2 in 2003, based on a font by Jason Glavy. This commercial product was based on my exploratory Unicode Saurashtra proposal (published at **www.evertype.com/standards/iso10646/pdf/saurashtra.pdf**). The encoding model and repertoire used by XenoType is a subset of the model used in *this* proposal; it is clear that the model works well for Saurashtra. There are also two TrueType implementations of the modern Saurashtra script in circulation on the internet. To date, no computer implementation of the older version of the script has been created. Previously, a letterpress was used to print *Bhāṣābhimāni* magazine. As printing technology advanced, the need for a Saurashtra script font was felt, and was created by local publishers. The *Suresh* font, designed by Suresh Thimma Ramdas, is used to print *Bhāṣābhimāni*; a later corrected version of that font is *Kuber*, which is used here. (The name *Kuber* is derived from “Kubendiran”, the name of the editor of this magazine.)

Traditional implementation in lead type was known from the end of the 19th century. According to Norihiko Učida:

Saurashtrans had their own beautiful and systematic script, the origin of which is not known. At the end of the last century T. M. Rama Ray reformed the script and cast types for it. He published many books in this script. Later he introduced some changes and standardized it. which is now used by some people as Saurashtra script. Since the end of the nineteenth century books have been printed in Telugu, Tamil, Devanagari and Saurashtra scripts. When Gandhiji preached for one common script for India, one group of the community decided to abandon the Saurashtra script in favour of Devanagari and destroyed the matrix designed by Rama Ray.

Collating order

The usual Sanskrit ordering applies to Saurashtra: A AA I II U UU RU RUU LU LUU E EE AI O OO AU AM AH UPAKSHARA KA KHA GA GHA NGA CA CHA JA JHA NYA TTA TTHA DDA DDHA NNA TA THA DA DHA NA PA PHA BA BHA MA YA RA LA VA SHA SSA SA HA LLA KSSA

Unicode Character Properties

The Saurashtra characters have properties similar to Devanagari and the other Indic scripts. Since Saurashtra uses no truly non-spacing marks, all of the combining classes are zero, with the exception of the virama. All of the letters are in the Letter other category, and have strong left-to-right directionality. The vowel signs all follow the consonants with which they are associated, and therefore are combining class zero as well, analogous to the Devanagari model. The virama has the same combining class (9) as other virama characters. The digits likewise are analogous to the Devanagari and other digits, with the same properties, including decimal digit values. The table below shows all of the properties defined in the UnicodeData.txt file.

```
A880;SAURASHTRA SIGN ANUSVARA;Mc;0;L;;;;;N;;;;;
A881;SAURASHTRA SIGN VISARGA;Mc;0;L;;;;;N;;;;;
A882;SAURASHTRA LETTER A;Lo;0;L;;;;;N;;;;
A883;SAURASHTRA LETTER AA;Lo;0;L;;;;;N;;;;
A884;SAURASHTRA LETTER I;Lo;0;L;;;;;N;;;;
A885;SAURASHTRA LETTER II;Lo;0;L;;;;;N;;;;
A886;SAURASHTRA LETTER U;Lo;0;L;;;;;N;;;;
A887;SAURASHTRA LETTER UU;Lo;0;L;;;;;N;;;;
A888;SAURASHTRA LETTER VOCALIC R;Lo;0;L;;;;;N;;;;
A889;SAURASHTRA LETTER VOCALIC RR;Lo;0;L;;;;;N;;;;
A88A;SAURASHTRA LETTER VOCALIC L;Lo;0;L;;;;;N;;;;
A88B;SAURASHTRA LETTER VOCALIC LL;Lo;0;L;;;;;N;;;;
A88C;SAURASHTRA LETTER E;Lo;0;L;;;;;N;;;;
A88D;SAURASHTRA LETTER EE;Lo;0;L;;;;;N;;;;
A88E;SAURASHTRA LETTER AI;Lo;0;L;;;;;N;;;;
A88F;SAURASHTRA LETTER O;Lo;0;L;;;;;N;;;;
A890;SAURASHTRA LETTER OO;Lo;0;L;;;;;N;;;;
A891;SAURASHTRA LETTER AU;Lo;0;L;;;;;N;;;;
A892;SAURASHTRA LETTER KA;Lo;0;L;;;;;N;;;;
A893;SAURASHTRA LETTER KHA;Lo;0;L;;;;;N;;;;
A894;SAURASHTRA LETTER GA;Lo;0;L;;;;;N;;;;
A895;SAURASHTRA LETTER GHA;Lo;0;L;;;;;N;;;;
A896;SAURASHTRA LETTER NGA;Lo;0;L;;;;;N;;;;
A897;SAURASHTRA LETTER CA;Lo;0;L;;;;;N;;;;
A898;SAURASHTRA LETTER CHA;Lo;0;L;;;;;N;;;;
A899;SAURASHTRA LETTER JA;Lo;0;L;;;;;N;;;;
A89A;SAURASHTRA LETTER JHA;Lo;0;L;;;;;N;;;;
A89B;SAURASHTRA LETTER NYA;Lo;0;L;;;;;N;;;;
A89C;SAURASHTRA LETTER TTA;Lo;0;L;;;;;N;;;;
A89D;SAURASHTRA LETTER TTHA;Lo;0;L;;;;;N;;;;
A89E;SAURASHTRA LETTER DDA;Lo;0;L;;;;;N;;;;
A89F;SAURASHTRA LETTER DDHA;Lo;0;L;;;;;N;;;;
A8A0;SAURASHTRA LETTER NNA;Lo;0;L;;;;;N;;;;
A8A1;SAURASHTRA LETTER TA;Lo;0;L;;;;;N;;;;
A8A2;SAURASHTRA LETTER THA;Lo;0;L;;;;;N;;;;
A8A3;SAURASHTRA LETTER DA;Lo;0;L;;;;;N;;;;
A8A4;SAURASHTRA LETTER DHA;Lo;0;L;;;;;N;;;;
A8A5;SAURASHTRA LETTER NA;Lo;0;L;;;;;N;;;;
A8A6;SAURASHTRA LETTER PA;Lo;0;L;;;;;N;;;;
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A8A7;SAURASHTRA LETTER PHA;Lo;0;L;;;;;N;;;;
A8A8;SAURASHTRA LETTER BA;Lo;0;L;;;;;N;;;;
A8A9;SAURASHTRA LETTER BHA;Lo;0;L;;;;;N;;;;
A8AA;SAURASHTRA LETTER MA;Lo;0;L;;;;;N;;;;
A8AB;SAURASHTRA LETTER YA;Lo;0;L;;;;;N;;;;
A8AC;SAURASHTRA LETTER RA;Lo;0;L;;;;;N;;;;
A8AD;SAURASHTRA LETTER LA;Lo;0;L;;;;;N;;;;
A8AE;SAURASHTRA LETTER VA;Lo;0;L;;;;;N;;;;
A8AF;SAURASHTRA LETTER SHA;Lo;0;L;;;;;N;;;;
A8B0;SAURASHTRA LETTER SSA;Lo;0;L;;;;;N;;;;
A8B1;SAURASHTRA LETTER SA;Lo;0;L;;;;;N;;;;
A8B2;SAURASHTRA LETTER HA;Lo;0;L;;;;;N;;;;
A8B3;SAURASHTRA LETTER LLA;Lo;0;L;;;;;N;;;;
A8B4;SAURASHTRA CONSONANT SIGN UPAKSHARA;Mc;0;L;;;;;N;;;;
A8B5;SAURASHTRA VOWEL SIGN AA;Mc;0;L;;;;;N;;;;;
A8B6;SAURASHTRA VOWEL SIGN I;Mc;0;L;;;;;N;;;;;
A8B7;SAURASHTRA VOWEL SIGN II;Mc;0;L;;;;;N;;;;;
A8B8;SAURASHTRA VOWEL SIGN U;Mc;0;L;;;;;N;;;;;
A8B9;SAURASHTRA VOWEL SIGN UU;Mc;0;L;;;;;N;;;;;
A8BA;SAURASHTRA VOWEL SIGN VOCALIC R;Mc;0;L;;;;;N;;;;;
A8BB;SAURASHTRA VOWEL SIGN VOCALIC RR;Mc;0;L;;;;;N;;;;;
A8BC;SAURASHTRA VOWEL SIGN VOCALIC L;Mc;0;L;;;;;N;;;;;
A8BD;SAURASHTRA VOWEL SIGN VOCALIC LL;Mc;0;L;;;;;N;;;;;
A8BE;SAURASHTRA VOWEL SIGN E;Mc;0;L;;;;;N;;;;;
A8BF;SAURASHTRA VOWEL SIGN EE;Mc;0;L;;;;;N;;;;;
A8C0;SAURASHTRA VOWEL SIGN AI;Mc;0;L;;;;;N;;;;;
A8C1;SAURASHTRA VOWEL SIGN O;Mc;0;L;;;;;N;;;;;
A8C2;SAURASHTRA VOWEL SIGN OO;Mc;0;L;;;;;N;;;;;
A8C3;SAURASHTRA VOWEL SIGN AU;Mc;0;L;;;;;N;;;;;
A8C4;SAURASHTRA SIGN VIRAMA;Mn;9;NSM;;;;;N;;;;;
A8CE;SAURASHTRA DANDA;Po;0;L;;;;;N;;;;;
A8CF;SAURASHTRA DOUBLE DANDA;Po;0;L;;;;;N;;;;;
A8D0;SAURASHTRA DIGIT ZERO;Nd;0;L;;0;0;0;N;;;;;
A8D1;SAURASHTRA DIGIT ONE;Nd;0;L;;1;1;1;N;;;;;
A8D2;SAURASHTRA DIGIT TWO;Nd;0;L;;2;2;2;N;;;;;
A8D3;SAURASHTRA DIGIT THREE;Nd;0;L;;3;3;3;N;;;;;
A8D4;SAURASHTRA DIGIT FOUR;Nd;0;L;;4;4;4;N;;;;;
A8D5;SAURASHTRA DIGIT FIVE;Nd;0;L;;5;5;5;N;;;;;
A8D6;SAURASHTRA DIGIT SIX;Nd;0;L;;6;6;6;N;;;;;
A8D7;SAURASHTRA DIGIT SEVEN;Nd;0;L;;7;7;7;N;;;;;
A8D8;SAURASHTRA DIGIT EIGHT;Nd;0;L;;8;8;8;N;;;;;
A8D9;SAURASHTRA DIGIT NINE;Nd;0;L;;9;9;9;N;;;;;
```

References

Norihiko Učida. *Language of the Saurashtrans in Tirupati*. (In Latin script.)

Norihiko Učida. *Saurashtra-English dictionary*. ISBN 3447030550. (In Latin script.) (Učida is a Japanese scholar who went to Madurai to research Saurashtra. He did his research at Madurai Kamarajar University. The local language in Madurai is Tamil; in the course of his research, he learned Saurashtra well and is said to speak Saurashtra as well as a native Saurashtrian.)

Padārthun. 1998. A magazine published in Madurai.

Bhāṣābhimāni. 2001. A magazine published in Madurai.

சுப்ரமணியன், ஸ்ரீ தாடா. 2000. = ஸவ்ராஷ்ட்ர பாட[2] மாலொ. மதுரை: ப்ரியா பதப்பகம் ப்ரியா டெக்னிகல் இன்ஸ்டிடியூட். [Śrī Tāṭā. Cupramaṇiyaṉ. 2000. *Savrāṣṭra pātha mālo = Savrāṣṭra pāṭ[2]a mālo*. Madurai: Priyā Patappakam Priyā Ṭekṉikal Insṭiṭiyuṭ]

Figures

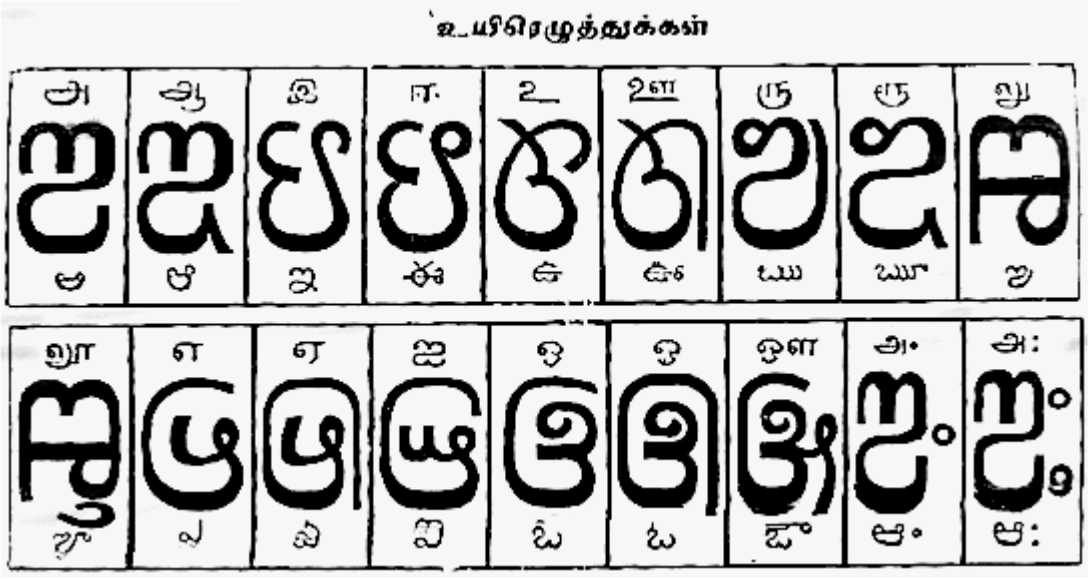


Figure 1. Saurashtra vowels, with equivalents in Tamil and Telugu scripts.

Figure 2. The text in the bottom half of this figure is given in Saurashtra and Tamil script. Note the unusual forms of -*ḷ* and -*ḹ*. The Saurashtra in the second line is in an early form of the script as it shows conjunct consonants. It is rendered here with modern orthography and transliteration:

ꢱꢵꢿꢬ ꢱꢬꢵꢳꢿꢮ ꢱꢴꢰ ꢱꢳꢴ, ꢮꢵꢳꢵꢬ।

ꢢꢵꢵꢿꢰ ꢱꢬꢵꢳꢿꢲꢵ ꢱꢴꢰꢿꢮ ꢱꢳꢴ, ꢮꢵꢳꢵꢬ।

śrēṣṭha saurāṣṭra sāhitya sabhā, machuro।

ஸ்ரேஷ்ட ஸௌராஷ்ட்ர ஸாஹீத்ய ஸபா, மதுரை

srēṣṭa saurāṣṭra sāhītya sapā, maturai

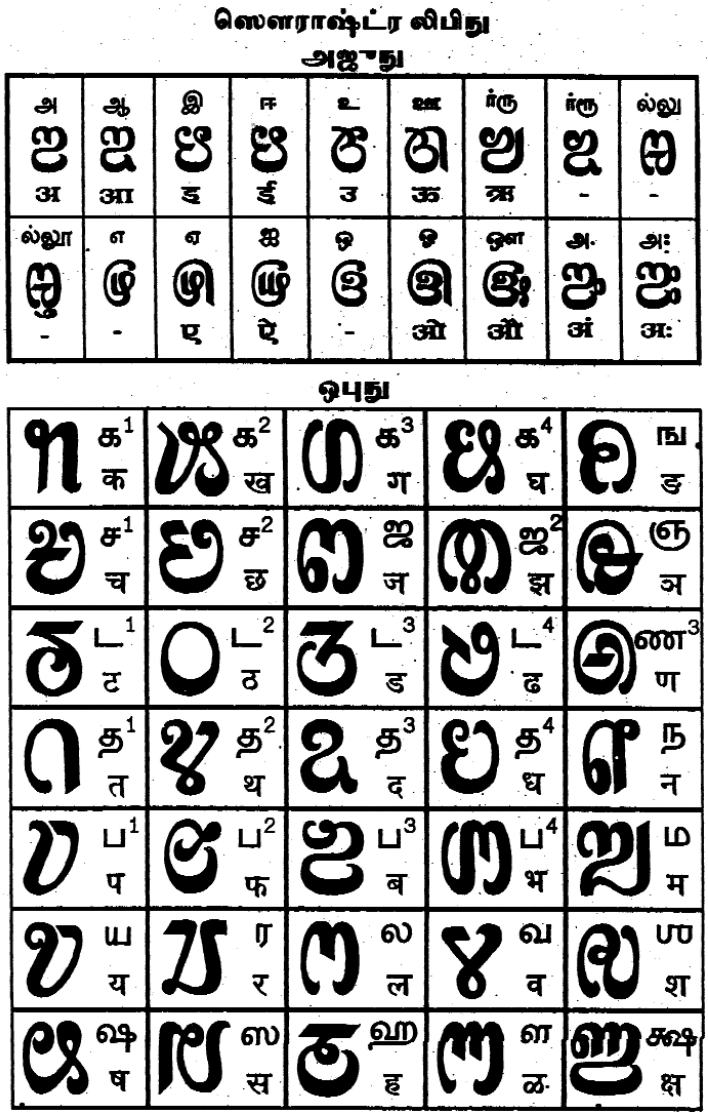


Figure 3. Sample from the magazine *Padārthun*, showing Saurashtra letters with equivalents in Tamil and Devanagari scripts.

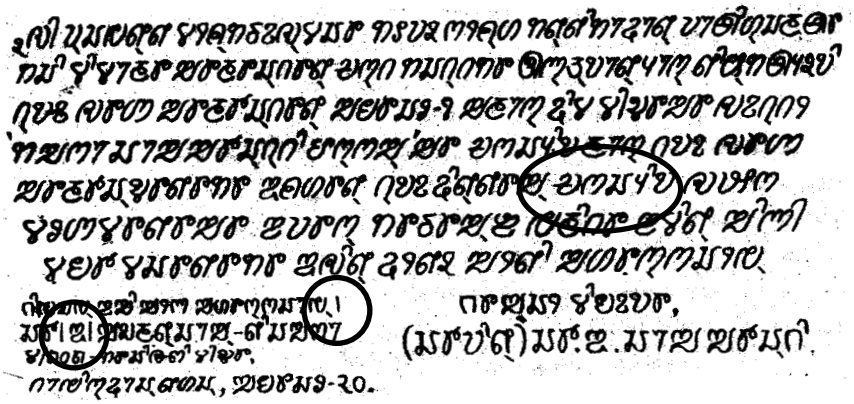
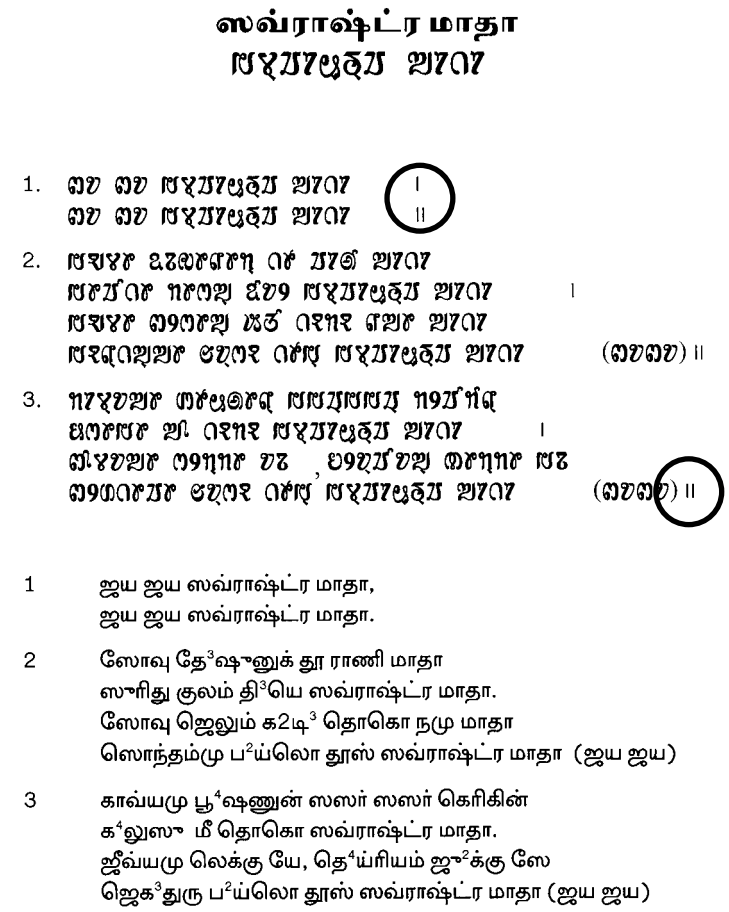


Figure 4. Handwritten text from an advertisement in *Padārthun*, showing the UPAKSHARA character. The word is ꢰꢵꢪꢿꢬ *calarʜiya*. The SAURASHTRA DANDA is used three times in the small text to the lower left.

தநுது

க ா க	க்லூ ாலூ -
கா ாள கா	கெ ாவ -
கி ி கி	கே ாே கே
கீ ீ கீ	கை ாை கை
கு ு கு	கொ ாொ -
கூ ூ கூ	கோ ாோ கோ
க்ரு ாஃ கு	கௌாௌ கௌ
க்ரூ ாூ -	கம் ாம் கं
க்லு ா஌ -	கஹ ாஃ கः

Figure 5. Sample from the magazine *Padārthun*, showing Saurashtra vowel matras with equivalents in Tamil and Devanagari scripts.



ஸவ்ராஷ்ட்ர மாதா

ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ

1. ꢀꢫ ꢀꢫ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ ।
ꢀꢫ ꢀꢫ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ ॥

2. ꢱꢳꢬꢬ ꢇꢃꢰꢬꢬꢴꢳ ꢀꢬ ꢵꢵꢲ ꢫꢀꢁ
ꢱꢬꢵꢀꢬ ꢳꢬꢀꢫ ꢇꢫꢲ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ ।
ꢱꢳꢬꢬ ꢀꢲꢀꢬꢫ ꢶꢲ ꢀꢬꢳꢬ ꢴꢫꢬ ꢫꢀꢁ
ꢱꢬꢴꢀꢫꢫꢬ ꢲꢫꢀꢬ ꢀꢬꢱ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ (ꢀꢫꢀꢫ) ॥

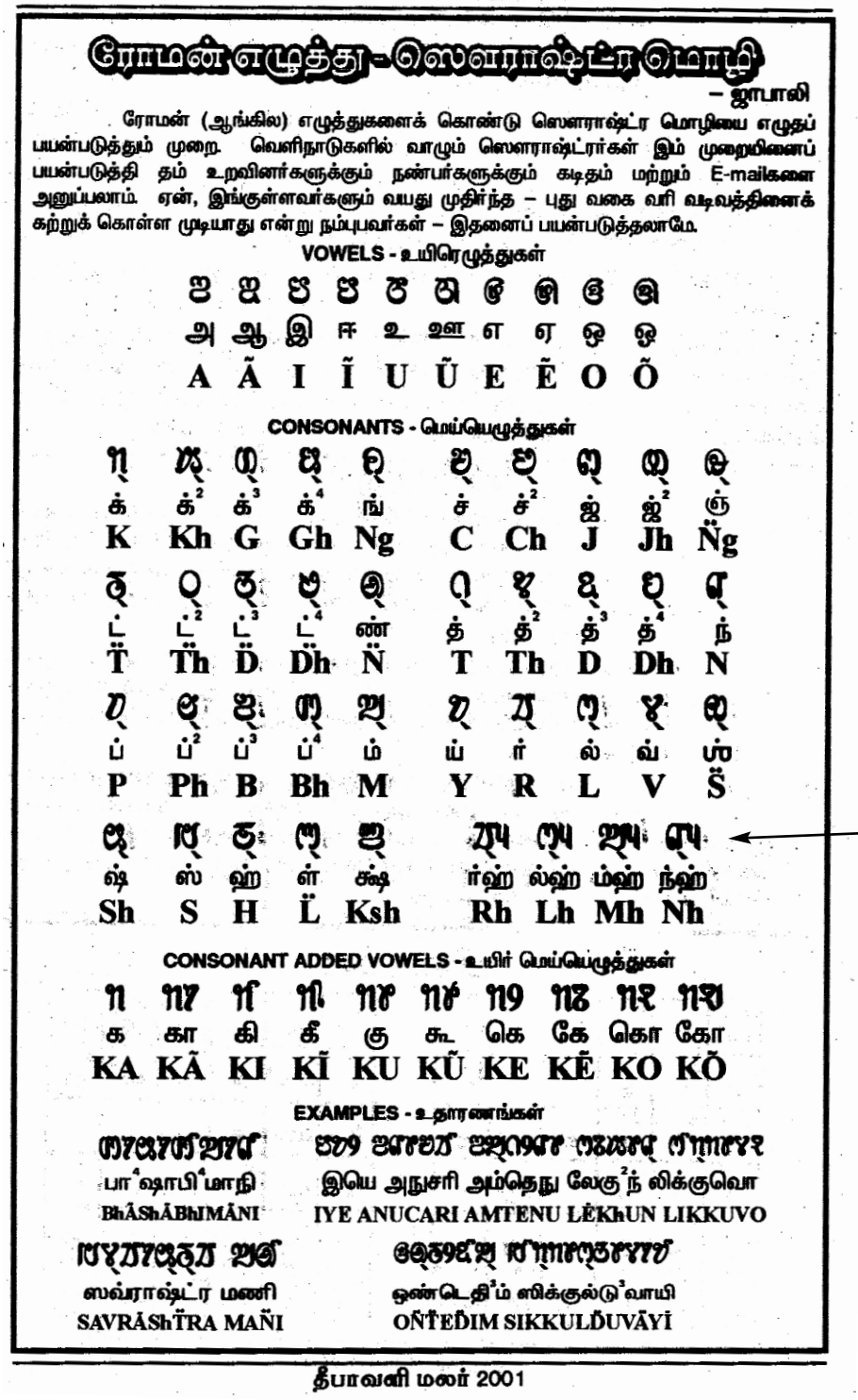
3. ꢳꢁꢬꢫꢬ ꢀꢬꢿꢰꢴꢁ ꢱꢱꢵꢱꢱꢵ ꢳꢲꢵꢿꢁ
ꢇꢀꢬꢱꢬ ꢫ. ꢀꢬꢳꢬ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ ।
ꢵ.ꢬꢫꢫꢬ ꢀꢲꢳꢬ ꢫꢇ , ꢫꢲꢇꢵꢫꢫ ꢀꢬꢿꢳꢬ ꢱꢇ
ꢵꢲꢇꢀꢬꢵꢬ ꢲꢫꢀꢬ ꢀꢬꢱ ꢱꢬꢵꢰꢿꢬ ꢫꢀꢁ (ꢀꢫꢀꢫ) ॥

1 ஜய ஜய ஸவ்ராஷ்ட்ர மாதா,
ஜய ஜய ஸவ்ராஷ்ட்ர மாதா.

2 ஸோவு தே[3]ஷ்ணுக் தூ ராணி மாதா
ஸுரிது குலம் தி[3]யெ ஸவ்ராஷ்ட்ர மாதா.
ஸோவு ஜெலும் க2டி[3] தொகொ நமு மாதா
ஸொந்தம்மு ப[2]ய்லொ தூஸ் ஸவ்ராஷ்ட்ர மாதா (ஜய ஜய)

3 காவ்யமு பூ[4]ஷணுன் ஸஸர் ஸஸர் கெரிகின்
க[4]லுஸு மீ தொகொ ஸவ்ராஷ்ட்ர மாதா.
ஜீவ்யமு லெக்கு யே, தெ[4]ய்ரியம் ஜு[2]க்கு ஸே
ஜெக[3]துரு ப[2]ய்லொ தூஸ் ஸவ்ராஷ்ட்ர மாதா (ஜய ஜய)

Figure 6. Sample from the magazine *Bhāṣābhimāni*, showing a Saurashtra poem with both SAURASHTRA DANDA and SAURASHTRA DOUBLE DANDA. A Tamil-script transliteration of the poem is also given.



ரோமன் எழுத்து - ஸௌராஷ்ட்ர மொழி

– ஜாபாலி

ரோமன் (ஆங்கில) எழுத்துகளைக் கொண்டு ஸௌராஷ்ட்ர மொழியை எழுதப் பயன்படுத்தும் முறை. வெளிநாடுகளில் வாழும் ஸௌராஷ்ட்ரர்கள் இம் முறையினைப் பயன்படுத்தி தம் உறவினர்களுக்கும் நண்பர்களுக்கும் கடிதம் மற்றும் E-mailகளை அனுப்பலாம். ஏன், இங்குள்ளவர்களும் வயது முதிர்ந்த – புது வகை வரி வடிவத்தினைக் கற்றுக் கொள்ள முடியாது என்று நம்புபவர்கள் – இதனைப் பயன்படுத்தலாமே.

VOWELS - உயிரெழுத்துகள்

ꢄ ꢅ ꢆ ꢇ ꢈ ꢉ ꢊ ꢋ ꢌ ꢍ

அ ஆ இ ஈ உ ஊ எ ஏ ஒ ஓ

A Ā I Ī U Ū E Ē O Ō

CONSONANTS - மெய்யெழுத்துகள்

ꢁ ꢂ ꢃ ꢀ ꢎ ꢏ ꢐ ꢑ ꢒ ꢓ

க் க்² க்³ க்⁴ ங் ச் ச்² ஜ் ஜ்² ஞ்

K Kh G Gh Ng C Ch J Jh Ñg

ꢔ ꢕ ꢖ ꢗ ꢘ ꢙ ꢚ ꢛ ꢜ ꢝ

ட் ட்² ட்³ ட்⁴ ண் த் த்² த்³ த்⁴ ந்

T̈ T̈h D̈ D̈h N̈ T Th D Dh N

ꢞ ꢟ ꢠ ꢡ ꢢ ꢣ ꢤ ꢥ ꢦ ꢧ

ப் ப்² ப்³ ப்⁴ ம் ய் ர் ல் வ் ஸ்

P Ph B Bh M Y R L V S̈

ꢨ ꢩ ꢪ ꢫ ꢬ ꢭꢿ ꢮꢿ ꢯꢿ ꢰꢿ

ஷ் ஸ் ஹ் ள் க்ஷ் ர்ஹ் ல்ஹ் ம்ஹ் ந்ஹ்

Sh S H L̈ Ksh Rh Lh Mh Nh

CONSONANT ADDED VOWELS - உயிர் மெய்யெழுத்துகள்

ꢁ ꢁꢾ ꢁꢿ ꢁꣀ ꢁꣁ ꢁꣂ ꢁꢹ ꢁꢺ ꢁꢻ ꢁꢼ

க கா கி கீ கு கூ கெ கே கொ கோ

KA KÃ KI KĨ KU KŨ KE KẼ KO KÕ

EXAMPLES - உதாரணங்கள்

ꢱꢬꢵꢰꢿ ꢯꢹ ꢯꢻꢯꢵ ꢯꢹꢁꢻꢯꢵ ꢱꢬꢵꢰꢿ ꢁꢻꢱꢼꢯꢵ

பா⁴ஷாபி⁴மாநி இயெ அநுசரி அம்தெநு லேகு²ந் லிக்குவொ

BhÂShÂBhIMÂNI IYE ANUCARI AMTENU LĖKhUN LIKKUVO

ꢯꢻꢰꢬꢵꢨꢻ ꢱꢵꢁ ꢁꢻꢁꢨꢻꢁꢯꢻꢱꢬꢵꢱꢿ

ஸவ்ராஷ்ட்ர மணி ஒண்டெதி³ம் ஸிக்குல்டு³வாயி

SAVRĀShT̈RA MÃNI OÑT̈EḎIM SIKKULḎUVĀYĨ

தீபாவளி மலர் 2001

Figure 7. Sample from the magazine *Bhāṣābhimāni*, showing Saurashtra letters with equivalents in Tamil and Latin. The consonants are shown with their vowels killed; the UPAKSHARA character is shown in combination with killed consonants, indicated with the arrow. Below that the vowel matras are given in combination with consonant ꢁ *ka*.

Figure 8. Sample from the magazine *Bhāṣābhimāni*, showing Saurashtra prose text. Note the use of SAURASHTRA DANDA.

Row A8: SAURASHTRA

	A88	A89	A8A	A8B	A8C	A8D
0	◌ꢀ	ꢉ	ꢊ	◌ꢰ	◌꣐	ꢐ
1	◌ꢁ	ꢋ	ꢌ	◌ꢱ	◌꣑	ꢑ
2	◌ꢂ	ꢍ	ꢎ	◌ꢲ	◌꣒	ꢒ
3	◌ꢃ	ꢏ	ꢐ	◌ꢳ	◌꣓	ꢓ
4	◌ꢄ	ꢑ	◌ꢴ	◌꣔	ꢔ
5	◌ꢅ	ꢒ	◌ꢵ	◌꣕	ꢕ
6	◌ꢆ	ꢓ	◌ꢶ	◌꣖	ꢖ
7	◌ꢇ	ꢔ	◌ꢷ	◌꣗	ꢗ
8	◌ꢈ	ꢕ	◌ꢸ	◌꣘	ꢘ
9	◌ꢉ	ꢖ	◌ꢹ	◌꣙	ꢙ
A	◌ꢊ	ꢗ	◌ꢺ	◌꣚	
B	◌ꢋ	ꢘ	◌ꢻ	◌꣛	
C	◌ꢌ	ꢙ	◌ꢼ	◌꣜	
D	◌ꢍ	ꢚ	◌ꢽ	◌꣝	
E	◌ꢎ	ꢛ	◌ꢾ	◌꣞	꣟	
F	◌ꢏ	ꢜ	◌ꢿ	◌꣟	꣠	

G = 00
P = 00

Row A8: SAURASHTRA

hex	Name
A880	SAURASHTRA SIGN ANUSVARA
A881	SAURASHTRA SIGN VISARGA
A882	SAURASHTRA LETTER A
A883	SAURASHTRA LETTER AA
A884	SAURASHTRA LETTER I
A885	SAURASHTRA LETTER II
A886	SAURASHTRA LETTER U
A887	SAURASHTRA LETTER UU
A888	SAURASHTRA LETTER VOCALIC R
A889	SAURASHTRA LETTER VOCALIC RR
A88A	SAURASHTRA LETTER VOCALIC L
A0BB	SAURASHTRA LETTER VOCALIC LL
A88C	SAURASHTRA LETTER E
A88D	SAURASHTRA LETTER EE
A88E	SAURASHTRA LETTER AI
A88F	SAURASHTRA LETTER O
A890	SAURASHTRA LETTER OO
A891	SAURASHTRA LETTER AU
A892	SAURASHTRA LETTER KA
A893	SAURASHTRA LETTER KHA
A894	SAURASHTRA LETTER GA
A895	SAURASHTRA LETTER GHA
A896	SAURASHTRA LETTER NGA
A897	SAURASHTRA LETTER CA
A898	SAURASHTRA LETTER CHA
A899	SAURASHTRA LETTER JA
A89A	SAURASHTRA LETTER JHA
A89B	SAURASHTRA LETTER NYA
A89C	SAURASHTRA LETTER TTA
A89D	SAURASHTRA LETTER TTHA
A89E	SAURASHTRA LETTER DDA
A89F	SAURASHTRA LETTER DDHA
A8A0	SAURASHTRA LETTER NNA
A8A1	SAURASHTRA LETTER TA
A8A2	SAURASHTRA LETTER THA
A8A3	SAURASHTRA LETTER DA
A8A4	SAURASHTRA LETTER DHA
A8A5	SAURASHTRA LETTER NA
A8A6	SAURASHTRA LETTER PA
A8A7	SAURASHTRA LETTER PHA
A8A8	SAURASHTRA LETTER BA
A8A9	SAURASHTRA LETTER BHA
A8AA	SAURASHTRA LETTER MA
A8AB	SAURASHTRA LETTER YA
A8AC	SAURASHTRA LETTER RA
A8AD	SAURASHTRA LETTER LA
A8AE	SAURASHTRA LETTER VA
A8AF	SAURASHTRA LETTER SHA
A8B0	SAURASHTRA LETTER SSA
A8B1	SAURASHTRA LETTER SA
A8B2	SAURASHTRA LETTER HA
A8B3	SAURASHTRA LETTER LLA
A8B4	SAURASHTRA CONSONANT SIGN UPAKSHARA
A8B5	SAURASHTRA VOWEL SIGN AA
A8B6	SAURASHTRA VOWEL SIGN I
A8B7	SAURASHTRA VOWEL SIGN II
A8B8	SAURASHTRA VOWEL SIGN U
A8B9	SAURASHTRA VOWEL SIGN UU
A8BA	SAURASHTRA VOWEL SIGN VOCALIC R
A8BB	SAURASHTRA VOWEL SIGN VOCALIC RR
A8BC	SAURASHTRA VOWEL SIGN VOCALIC L
A8BD	SAURASHTRA VOWEL SIGN VOCALIC LL
A8BE	SAURASHTRA VOWEL SIGN E
A8BF	SAURASHTRA VOWEL SIGN EE
A8C0	SAURASHTRA VOWEL SIGN AI
A8C1	SAURASHTRA VOWEL SIGN O
A8C2	SAURASHTRA VOWEL SIGN OO
A8C3	SAURASHTRA VOWEL SIGN AU
A8C4	SAURASHTRA SIGN VIRAMA
A8C5	(This position shall not be used)
A8C6	(This position shall not be used)
A8C7	(This position shall not be used)
A8C8	(This position shall not be used)
A8C9	(This position shall not be used)
A8CA	(This position shall not be used)
A8CB	(This position shall not be used)
A8CC	(This position shall not be used)
A8CD	(This position shall not be used)
A8CE	SAURASHTRA DANDA
A8CF	SAURASHTRA DOUBLE DANDA
A8D0	SAURASHTRA DIGIT ZERO
A8D1	SAURASHTRA DIGIT ONE
A8D2	SAURASHTRA DIGIT TWO
A8D3	SAURASHTRA DIGIT THREE
A8D4	SAURASHTRA DIGIT FOUR
A8D5	SAURASHTRA DIGIT FIVE
A8D6	SAURASHTRA DIGIT SIX
A8D7	SAURASHTRA DIGIT SEVEN
A8D8	SAURASHTRA DIGIT EIGHT
A8D9	SAURASHTRA DIGIT NINE
A8DA	(This position shall not be used)
A8DB	(This position shall not be used)
A8DC	(This position shall not be used)
A8DD	(This position shall not be used)
A8DE	(This position shall not be used)
A8DF	(This position shall not be used)

A. Administrative

1. Title

Final revised proposal to encode the Saurashtra script in the UCS.

2. Requester's name

Michael Everson.and Jeyakumar Chinnakkonda Krishnamoorty

3. Requester type (Member body/Liaison/Individual contribution)

Individual contribution.

4. Submission date

2005-08-31

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

Yes.

6b. More information will be provided later

No.

B. Technical – General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

Yes.

Proposed name of script

Saurashtra.

1b. The proposal is for addition of character(s) to an existing block

No.

1b. Name of the existing block

2. Number of characters in proposal

79

3. Proposed category (see section II, Character Categories)

Category A.

4a. Proposed Level of Implementation (1, 2 or 3) (see clause 14, ISO/IEC 10646-1: 2000)

Level 2.

4b. Is a rationale provided for the choice?

Yes.

4c. If YES, reference

Brahmic script with vowel signs.

5a. Is a repertoire including character names provided?

Yes.

5b. If YES, are the names in accordance with the naming guidelines in Annex L of ISO/IEC 10646-1: 2000?

Yes.

5c. Are the character shapes attached in a legible form suitable for review?

Yes.

6a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Jeyakumar C. K. (www.palkar.org) & Michael Everson (Evertype). TrueType.

6b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Jeyakumar C. K. (www.palkar.org) & Michael Everson (Evertype). Fontographer.

7a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes.

7b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

8. 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)?

Yes.

9. 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.

See Unicode properties above.

C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

Yes. See N2607.

2a. 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.

2b. If YES, with whom?

Jeyakumar C. K. is a user himself, and has been in touch with Mr Kubendiran, editor of 𑢪𑢵𑢷𑢺𑢬𑢵 *Bhāṣābhimāni*.

2c. If YES, available relevant documents
N/A.
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
Yes.
4a. The context of use for the proposed characters (type of use; common or rare)
Saurashtra script is used fairly rarely, but it is enjoying a renasissance, and certainly has some commercial value (there are even advertisements in the monthly magazine *Bhāṣābhimāni* for "Desk Top Publishing in English, Tamil, Hindi, Malayalam, Sourashtra". Both the Saurashtran and Tamil scripts are used to write Saurashtra. Use of Saurashtra script is primarily cultural and religious, though some private schools are now teaching the script to children.
4b. Reference
5a. Are the proposed characters in current use by the user community?
Yes.
5b. If YES, where?
In the Indian states Tamil Nadu and Andhra Pradesh. The monthly magazine *Bhāṣābhimāni* is published in Madurai. Much of this magazine is written in Tamil and in Saurashtra in Tamil script, but Saurashtra script is also used in it.
6a. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP?
Yes.
6b. If YES, is a rationale provided?
Yes.
6c. If YES, reference
Accordance with the Roadmap.
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?
Yes.
8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?
No. Superficial
8b. If YES, is a rationale for its inclusion provided?
8c. If YES, reference
9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?
No.
9b. If YES, is a rationale for its inclusion provided?
9c. If YES, reference
10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?
No.
10b. If YES, is a rationale for its inclusion provided?
10c. If YES, reference
11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?
Yes.
11b. If YES, is a rationale for such use provided?
Yes.
11c. If YES, reference
Brahmic vowel signs.
12a. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
No.
12b. If YES, reference
13a. Does the proposal contain characters with any special properties such as control function or similar semantics?
No.
13b. If YES, describe in detail (include attachment if necessary)
14a. Does the proposal contain any Ideographic compatibility character(s)?
No.
14b. If YES, is the equivalent corresponding unified ideographic character(s) identified?
14c. If YES, reference