Proposal for Encoding of Vaidika Characters & Symbols in Unicode

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Title: **Proposal to encode 68 characters for Encoding of Vaidika Sanskrit Characters & Symbols in the BMP of UCS**
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Government of India
Status: **Institutional Member's Contribution**
Action: **For consideration by UTC**
Replaces: **L2/07-395, L2/07-396, L2/07-397**
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This Draft proposal dated 23 January 2008 is prepared by Prof. R. K. Joshi and Dr. Alka S. Irani and her team of LCG, C-DAC Mumbai in collaboration with Micheal Everson and Peter Scharf and their team and is a consolidation of their earlier proposals L2/07-39{5,6,7} dated 2007-10-18 and L2/07-343 dated 2007-10-18 respectively.

This proposal was advised by Shri. Bharat Bhushan, JS&FA, GC, LCG, Ministry of Communications and Information Technology (MC&IT), Govt. of India, guided and supervised by Smt. Swaran Lata, Director & HOD (HCC DIV), MC&IT, Govt. of India and co-ordinated by Shri. Manoj Jain, Joint Director, HCC, MC&IT, Govt. of India.

This proposal was drawn in consultation with various scholars, technologists and representatives of Institutes from India and abroad. Their contribution at various stages is greatly appreciated and hereby acknowledged.

The following documents (duly put up on the South Asian Sub-committee as per Unicode UTC# 113, Oct 2007 *http://www.unicode.org/~emuller/southasia/vedic/*) were duly considered in this revised combined single proposal.

Documents
The Everson, Scharf et al. proposals:

- 2007-10-18: L2/07-343; differences with L2/07-230 in L2/07-394
- 2007-07-26: L2/07-230; history of that document in L2/07-262
- 2007-04-26: L2/07-095R
  - Comments in L2/07-388
    - Comments in L2/07-400

The Government of India proposals:

- 2007-10-10: L2/07-395, L2/07-396, L2/07-397
- 2006-05-10 L2/06-185

Comparisons:

- 2007-10-18: L2/07-401: L2/07-343 vs. L2/07-39{5,6,7}
- 2007-08-08: L2/07-271: L2/07-230 vs. L2/06-185
  - Response in L2/07-386
    - Comments in L2/07-400

Opening Remarks

In the earlier proposal document L2/07-39{5, 6, 7} 79 character codes were identified under the block entitled Vaidika Extensions and requested for its inclusion in the suitable slot in the BMP of UCS.

And, in the earlier document No.L2/07-343 dated 2007-10-18, 53 characters were identified under Devanagari extended (23) and Vedic extensions (24) and Devanagari (6).

The comparative summary and comments on the above proposals in the South Asia sub-committee *http://www.unicode.org/~emuller/southasia/vedic/* under 3.1 to 3.11, has been taken into account in preparing of this Combined Revised Single Proposal (as per UTC# 113 advise). We have made our observations for Samavedic letters and digits (3.3) and Samavedic, others (3.4) and have presented our recommendations for encoding the same in Vaidika extensions B.

In this Revised Combined Single Proposal, the 68 characters for encoding purpose are as follows:
In the Vaidika Extensions A (1CD0 – 1CFF), 38 characters have been recommended for codes, and in Vaidika extensions B (A8E0 – A8FF), 27 characters have been recommended for codes which are for Samaveda. The two codes A8FE and A8FF namely Vaidika prarambha Chihna and Vaidika Antha Chihna have been provided for addressing syllabic tonal/accent marks in Jaiminiya branch. Three characters has been recommended to be added in Devanagari 09 block. The Samavedic syllabic marks as found in Jaiminiya branch have been kept open for the want of adequate document evidences.

This draft proposal have been discussed and consolidated with the help of many Vaidika Sanskrit scholars, Sanskrit academicians, linguists, technologists from various academic research institutions in India and abroad and Government of India officials. Their valuable contributions are duly acknowledged.

Introduction

The ancient holy text in India is known by the name of the *Veda*. The word *Veda* is derived from the root verb *"vid"- to know, to attain the knowledge*. There are 4 *Vedas* namely *RigVeda, YajurVeda, SaamaVeda* and *AtharvaVeda*. Composed in verse format using Sanskrit language, the contents of these *Vedas* are of spiritual, philosophical and practical nature and are to be vocalized in terms of recitation, chanting, singing, etc. The collections of the *Mantras* (the compositions in poetry and prose form) of the four *Vedas* were further divided into *Shaakhaas* (branches). The classes of reciters known as Vaidikas belonging to individual branches have retained their chanting characteristics while vocalizing the *Mantras*. This oral mode acquired a great significance in ancient India in terms of Teacher-students tradition *(guru-shishya paramparaa)*. At later stage such oral recitations had to be written down by *Pandits* in order to retain the knowledge in the written mode. To write such Vaidika text with vocal nuances, various signs (*svaraankana-paddhati*) were devised and placed around syllables. These are called Vaidika accent and tonal signs. It is interesting to note that a single chant if vocalised by the *Vaidikas* of different branches, would have slight variation in terms of nasalization, intonation, continuum, stress etc. And to indicate these differences, many variants of a single sign have been developed. For example, there are 15 variations of *Anusvaara* indicated by 15 graphic signs with slight variations in their visual forms. The selective usage of these signs indicates that the particular text is from a particular branch of *Veda*.

It is observed that there is a *Vaidika* tradition of hand movements *(Hasta-Mudraas)* to suggest the proper way of intonation while chanting the *Mantras*.

Sanskrit is one of the most ancient languages of the world, which has moulded the culture and the thought systems not only of India but also of many other countries in Asia. Sanskrit is not a dead language. Sanskrit was for over a millennium, a living spoken language with a considerable literature of its own. Besides works of literary value, there was a long philosophical and grammatical tradition.

Many Universities in India and abroad are involved in the Vaidika studies as a specialized subject. Traditional *Vaidika Paathashaalaas* in various parts of India are involved in imparting the practice and knowledge of *Vaidika* oral tradition. Temples and *Mathas* are providing support for learning and teaching Vaidika texts. Various research institutes are actively involved in bringing out critical editions of the Vaidika texts and various research activities in this field.

1. The range of Vaidika texts

The Vaidika texts refer to the four groups of *Vedas* namely *RigVeda, YajurVeda (Shukla and Krishna), SaamaVeda* and *AtharvaVeda*. The range of Vaidika texts extend to their respective *Shaakhaas, Upashaakhaas* (branches-subbranches), *Samhitaas, Braahmannas, Aarannyakas, Upanishads, Shrautasuutras, Praatishaakhyas* and *Shikshaas*. Originally, the Vaidika text (mostly in verse form)

–*Samhitaas* along with their respective *Padapaathas* exist in the oral mode and were passed on from *Guru* to *Shishya* through various processes such as *Shravanna* (listening), *Anuchchaaranna* (repetition), *Arthabodha* (understanding of the meaning), *Kannthasthiikaranna* (memorisation), *Charchaa-Samvaada* (discussion) and *Prashnottara* (Questions &Answers).

Later on when these texts were written (with appropriate methodologies and materials, the need was felt to introduce *Vaidika Svaraankana Chihnas* (accent/tonal marks, signs and symbols) as a guide for proper pronunciation (and hence proper reading) of such texts.

The *Shikshaas* cover the study of the terms such as *Varna* (letters of alphabet), *Svara* - (accents like *Udaatta, Anudaatta* and *Svarita*), *Maatraa* (the time measurement required for the pronunciation), *Bala* (stress - in context to *sthaana* and *prayatna*) etc.

The *Praatishaakhyas* constitute studies on phonetics, which prevailed in ancient India in different schools of the *Vedas*. Each *Praatishaakhya* with the ancient phonetic system was applicable to a particular school of each *Veda*. Some of the *Praatishaakhyas* such as *Taittiriiya* covered subjects like *Uchchaaranna-kalpa* - formation of articulate sounds and more of their production.

2. Vaidika texts with Svaraankana Chihnas

One of the most significant characteristics of Vaidika language is its proper accentuation system in utterances of its words, sentences as well as prose and versified compositions.

Vaidika text with *Svaraankana Chihnas* is available in various groups of Vaidika literature such as *Samhitaas*, *Braahmannas*, *Aarannyakas* and *Upanishads*. Besides, various *Pratishaakhyas* and *Shikshaagranthas* have discussed the theoretical as well as grammatical and practical aspects of `*Uchchaaranna'* (accentology) supported by examples of *Svaraankana Chihnas* (accentography) as well as their contextual rules.

Various branches of *RigVeda, YajurVeda, SaamaVeda* and *AtharvaVeda* are marked with `*Svaras'.* It is observed that the Vaidika text and its accent marks vary in their application and presentation as per its branch, sub-branch, tradition and location.

For example:
In *RigVeda*, the *Udaatta Svara* is left unmarked. In *Rigveda* and *YajurVeda* the *Svarita Svara* is marked with short vertical line on the top of a syllable. The same sign appears as *Anudaatta* mark below a syllable in *AtharvaVeda* (*Paippalaada Shaakhaa*).

3. The importance of Svaraankana Chihnas

Svaraankana Chihnas are very useful devices in more than one way. On one hand these marks represent nuances of pronunciation and on the other hand these marks are used for semantic differentiation as well.

       3a.   *Svaraankana Chihnas* are used in each *Pada* (word) as to help to understand the proper meaning (*Arthabodha*) of a *Mantra*.

      3a.1   The knowledge of the kind of *Samaasapada*

इद्द्रशत्रुः

-   The killer of *Indra*

Tatpurusha samaas

इद्द्रशत्रुः

- The one for whom *Indra* is an enemy
  Bahuvriihi samaas

      3a.2   For Gender classification

मिहः
- Adjective, Feminine Gender

मिहः
- Adjective, Masculine Gender

      3b   *Svaraankana Chihnas* are useful in context of deciding the grammatical status of a *pada*.

अपस्
- Noun

अपस्
- Adjective

3c   *Svaraankana Chihnas* are used in context to sentence classification. Some words in a sentence are accented and some are not, creating the correct meaning.

   3c1.   The verb in the principle clause is unaccented whereas in the subordinate clause it is accented.

   3c2.   In a given sentence, if a speaker does not give any stress on the *pada*, then it is marked as a *Sarvaanudaatta*. Whereas, if a speaker wants to give a stress in the beginning of the word then that is accented.

   3c.3   If there is a concept of addressing someone (vocative) in the beginning of a sentence then the first syllable of the *pada* will be accented.

4.   The Contextual aspect of Svaraankana Chihnas

The *Svaraankana Chihnas* of Vaidika Sanskrit are not independent signs. They do not behave as punctuation marks. The *Svaraankana Chihnas* are positioned all around the syllable. Some of them are of zero width and some have positive widths. However these marks with positive widths cannot be termed as letters. Most of these marks are dependent on the context i.e. preceding syllable and or following syllable. Further these positive width marks can take zero width marks above or below of them and are governed by linguistic rules as per grammar.

4.1   In *Samhitaa* text and in the *Padapaatha*, different signs are noticed in case of the same *pada*. (*Vaajasaneyi Maadhyandina Shukla YajurVeda Samhitaa* pg102/5.27).

ह॒ ᳪ॑ ह

   - *Samhitaa*

ह॒ ꣫ ह

   - *Padapaatha*

4.2   Vaidika *Anusvaara*, when it occurs in the *Samhitaa* is affected by the pronunciation of the subsequent sound. When *Samhitaa* is split into *padapaatha*, due to the pause that follows after the *Anusvaara*, the *Anusvaara* sounds differently so it is shown with two different signs in the *Samhitaa* and *Padapaatha*.

व रु॑ थ॒ ᳪ॑ स्वाहा॑

   - *Samhitaa*

| वरूथम् । स्वाहा ।
- *Padapaatha*

Here the *Anusvaara* is changed to `M' in the *Padapaatha*.
Vaajasaneyi Maadhyandina Shukla YajurVeda Samhitaa (pg106/5.35).

4.3 The *Anusvaara*, which is inside the *pada* remains as it is.
This *Anusvaara* is not caused by any factor outside of that word itself,
but is there in the process of the formation of the *pada*.
Vaajasaneyi Maadhyandina Shukla YajurVeda Samhitaa (pg129).

प्रशंसिषो
- *Samhitaa*

प्र । शंसिष:
- *Padapaatha*

All these and similar cases of an *Svaraankana Chihna* are
appropriately reflected in the property data provided in this draft
proposal.

5. The identified range, positioning and compositions of *Svaraankana Chihnas*

5a. The total number of 32 Vedic Sanskrit signs were identified in the
`Extended character set for Vedic' in the ISCII document Annex-G
(IS13194: 1991). The extension character (EXT), defined in ISCII, was
to be followed by another character in the range of A1 Hex to EE Hex,
to yield additional 32 characters needed for Vedic Sanskrit text with
such accent marks.

5b. Further, the additional Vaidika accent signs (*Svaraankana Chihnas*)
were observed from various sources- manuscripts/printed texts.

These signs were discussed and debated regarding their multiple
usages, redundancies, earlier technology restrains, multiple shapes
and usability factors.

5c. From the total of identified 102 Vaidika signs, the codes for 68 Vaidika characters have been chosen and recommended as candidates for Unicode in this draft proposal.

The 68 Vaidika signs can be classified as follows:
- VAIDIKA ANUSVAARA   14
- VAIDIKA VISARGA   6
- VAIDIKA SVARITA   13
- VAIDIKA SAAMASVARA   25
- VAIDIKA SYMBOLS   5
- VAIDIKA JAIMINIYA SPEACIAL SIGNS   2
- DEVANAGARI   3

Through this range of codes, following texts can be addressed:

1. **Rigvedic Text :**   for example 1CE7,1CEF from Vaidika Extensions 0951,0952 from Devanagari etc

2. **Yajurvedic Text:**   for example 1CEB,1CEA,1CE9,1CE5,1CE8 etc

3. **Samavedic Text:**   for example A8E0, A8E1, A8E2, A8E3, A8E4, A8E5 etc.

4. **Atharvavedic Text:** for example 1CE4,1CEC,1CED etc

5. **Nasal/Tonal narks:** for example 1CD1,1CD8,1CDC,1CE3 etc

6. **Vaidika Symbols:**   for example 1CF1, 1CF2, 1CF3 etc

7. **Samavedic Text:**

   Jamaniya Shaakha:
   In case of *Samavedic text* of *Jaiminiiya Shaakha*, it is observed that they have different system of syllables to be used as accent marks. These marks need to be handled through a separate soft tool or can be addressed by introducing two new codes namely A8FE & A8FF.

6. The compositional rules

The *Vaidika Swaraadi Chihnas, Vaidika Svaraankana Chihnas, Vaidika Saamasvara Chihnas* are to be rendered above, below and/or right side of the syllable.

The types of *Svaraankana Chihnas* and their compositional rules are given separately

VAIDIKA EXTENTIONS A

	1CD	1CE	1CF
0	1CD0	1CE0	1CF0
1	1CD1	1CE1	1CF1
2	1CD2	1CE2	1CF2
3	1CD3	1CE3	1CF3
4	1CD4	1CE4	1CF4
5	1CD5	1CE5	1CF5
6	1CD6	1CE6	1CF6
7	1CD7	1CE7	1CF7
8	1CD8	1CE8	1CF8
9	1CD9	1CE9	1CF9
A	1CDA	1CEA	1CFA
B	1CDB	1CEB	1CFB
C	1CDC	1CEC	1CFC
D	1CDD	1CED	1CFD
E	1CDE	1CEE	1CFE
F	1CDF	1CEF	1CFF

VAIDIKA EXTENTIONS B

	A8E	A8F
0	A8E0	A8F0
1	A8E1	A8F1
2	A8E2	A8F2
3	A8E3	A8F3
4	A8E4	A8F4
5	A8E5	A8F5
6	A8E6	A8F6
7	A8E7	A8F7
8	A8E8	A8F8
9	A8E9	A8F9
A	A8EA	A8FA
B	A8EB	A8FB
C	A8EC	A8FC
D	A8ED	A8FD
E	A8EE	A8FE
F	A8EF	A8FF

DEVANAGARI

0900	0979
097A	

Summary:

VAIDIKA EXTENTIONS A = 38 signs
VAIDIKA EXTENTIONS B = 27 signs
DEVANAGARI   = 3 sign

TOTAL   = 68 signs

VAIDIKA EXTENTIONS   A   (23 January 2008)

VAIDIKA ANUSVAARA		
1CD0	ঁ	VAIDIKA CANDRABINDU
1CD1	ঁ	VAIDIKA ANUSVAARA CANDRABINDU TIRYAK
1CD2	ঁ	VAIDIKA ANUSVAARA CANDRABINDU SADVI
1CD3	ঁ	VAIDIKA ANUSVAARA CANDRABINDU SATRI
1CD4	ঁ	VAIDIKA ANUSVAARA CANDRABINDU SAAVAGRAHA
1CD5	ঁ	VAIDIKA ANUSVAARA DVI CANDRABINDU TIRYAK
1CD6	ঁ	VAIDIKA ANUSVAARA ANTARMUKHA
1CD7	ঁ	VAIDIKA ANUSVAARA VAAMAMUKHA
1CD8	ঁ	VAIDIKA ANUSVAARA VAAMAMUKHA SAVAKRA
1CD9	ঁ	VAIDIKA ANUSVAARA BAHIRMUKHA
1CDA	ঁ	VAIDIKA ANUSVAARA VAAMAMUKHA SACANDRA
1CDB	ঁ	VAIDIKA ANUSVAARA BAHIRMUKHA SACANDRA
1CDC	ঁ	VAIDIKA ANUSVAARA ANUGAMI
1CDD	ঁ	VAIDIKA ANUSVAARA TTHASADRISHA

VAIDIKA VISARGA		
1CDE	ঁ	VAIDIKA MADHYEREKHAA
1CDF	ঁ	VAIDIKA DAKSHINNATAH UURDHVAGA
1CE0	ঁ	VAIDIKA VAAMATAH ADHOGA
1CE1	ঁ	VAIDIKA VAAMATAH UURDHVAGA
1CE2	ঁ	VAIDIKA DAKSHINATAH ADHOGA
1CE3	ঁ	VAIDIKA JIHVAAMULIYA UPADHAMAANIYA

		VAIDIKA SVARITA	
1CE4	○ʃ	VAIDIKA SVARITA DVI VAKRA KHANDA
1CE5	◌̈	VAIDIKA SVARITA UURDHVA DVI REKHAA
1CE6	◌̈	VAIDIKA SVARITA UURDHVA TRI REKHAA
1CE7	◌	VAIDIKA UURDHVA VAKRA REKHAA
1CE8	◌	VAIDIKA SVARITA ADHO VAKRA REKHAA
1CE9	◌	VAIDIKA SVARITA ADHAH ARDHA VAKRA
1CEA	◌	VAIDIKA SVARITA ADHO NYUBJA
1CEB	◌	VAIDIKA SVARITA ADHAH KONNA
1CEC	◌	VAIDIKA SVARITA ADHO REKHAA
1CED	◌	VAIDIKA SVARITA ADHO BINDU
1CEE	◌	VAIDIKA SVARITA ADHO SAMYUKT REKHAA
1CEF	◌	VAIDIKA KAMPA
1CF0	◌	VAIDIKA SVARITA URASI REKHAA

		VAIDIKA SYMBOLS	
1CF1	꣑	VAIDIKA PUSHPIKA
1CF2	◌	VAIDIKA MAATRAAKAAL
1CF3	◌	VAIDIKA TIRYAK
1CF4	卐	VAIDIKA SWASTIKA
1CF5	◌̌	VAIDIKA TRUTIKAA

VAIDIKA SAAMASVARA		
A8E0	০	VAIDIKA SAAMASVARA ANKA SHUUNYA
A8E1	১	VAIDIKA SAAMASVARA ANKA EKA UDATTA
A8E2	২	VAIDIKA SAAMASVARA ANKA DVI SVARITA
A8E3	३	VAIDIKA SAAMASVARA ANKA TRI ANUDATTA
A8E4	४	VAIDIKA SAAMASVARA ANKA CHATUR
A8E5	५	VAIDIKA SAAMASVARA ANKA PANCHA
A8E6	६	VAIDIKA SAAMASVARA ANKA SHATT
A8E7	७	VAIDIKA SAAMASVARA ANKA SAPTA
A8E8	८	VAIDIKA SAAMASVARA ANKA ASHTTA
A8E9	९	VAIDIKA SAAMASVARA ANKA NAVA
A8EA	अ	VAIDIKA SAAMASVARA ABHINIHITA
A8EB	न	VAIDIKA SAAMASVARA NAMANA
A8EC	र	VAIDIKA SAAMASVARA RA
A8ED	क	VAIDIKA SAAMASVARA KA
A8EE	उ	VAIDIKA SAAMASVARA U
A8EF	१र	VAIDIKA SAAMASVARA SVARITA EKARA
A8F0	२उ	VAIDIKA SAAMASVARA SVARITA DVIU
A8F1	३क	VAIDIKA SAAMASVARA SVARITA TRIKA
A8F2	प	VAIDIKA SAAMASVARA PRANNATAM
A8F3	वि	VAIDIKA SAAMASVARA VINATA
A8F4	S	VAIDIKA SAAMASVARA DIRGIBAVA
A8F5	^	VAIDIKA SAAMASVARA KARSHANNA
A8F6	↑	VAIDIKA SVARITA UURDHVA SHARA
A8F7	―	VAIDIKA SAAMASVARA PRENKHA
A8F8	ʼʼ	VAIDIKA SAAMAGAAN YOGAKAALA

VAIDIKA JAIMINIYA SPEACIAL SIGNS		
A8FE	⊥	VAIDIKA PRARAMBHA CHIHNA
A8FF	⊥	VAIDIKA ANTHA CHIHNA

DEVANAGARI   (23 JANUARY 2008)

0900	ँ	VAIDIKA ADHOMUKHA CANDRABINDU
0979	य	VAIDIKA LETTER JJYA
097A	ब्ह	VAIDIKA LETTER LLHA

Unicode Data Properties

```
1CD0;VAIDIKA CANDRABINDU;Lo;0;L;;;;;N;;;;;
1CD1;VAIDIKA ANUSVAARA CANDRABINDU TIRYAK ;Lo;0;L;;;;;N;;;;;
1CD2;VAIDIKA ANUSVAARA CANDRABINDU SADVI ;Lo;0;L;;;;;N;;;;;
1CD3;VAIDIKA ANUSVAARA CANDRABINDU SATRI;Lo;0;L;;;;;N;;;;;
1CD4;VAIDIKA ANUSVAARA CANDRABINDU SAAVAGRAHA;Lo;0;L;;;;;N;;;;;
1CD5;VAIDIKA ANUSVAARA DVI CANDRABINDU TIRYAK;Lo;0;L;;;;;N;;;;;
1CD6;VAIDIKA ANUSVAARA ANTARMUKHA;Lo;0;L;;;;;N;;;;;
1CD7;VAIDIKA ANUSVAARA VAAMAMUKHA;Lo;0;L;;;;;N;;;;;
1CD8;VAIDIKA ANUSVAARA VAAMAMUKHA SAVAKRA;Lo;0;L;;;;;N;;;;;
1CD9;VAIDIKA BAHIRMUKHA;Lo;0;L;;;;;N;;;;;
1CDA;VAIDIKA ANUSVAARA VAAMAMUKHA SACANDRA;Lo;0;L;;;;;N;;;;;
1CDB;VAIDIKA ANUSVAARA  BAHIRMUKHA SACANDRA;Lo;0;L;;;;;N;;;;;
1CDC;VAIDIKA ANUSVAARA ANUGAMI;Lo;0;L;;;;;N;;;;;
1CDD;VAIDIKA ANUSVAARA TTHASADRISHA;Lo;0;L;;;;;N;;;;;
1CDE;VAIDIKA MADHYEREKHAA;Mn;1;NSM;;;;;N;;;;;
1CDF;VAIDIKA DAKSHINNATAH UURDHVAGA   ;Mn;1;NSM;;;;;N;;;;;
1CE0;VAIDIKA VAAMATAH ADHOGA   ;Mn;1;NSM;;;;;N;;;;;
1CE1;VAIDIKA VAAMATAH UURDHVAGA;Mn;1;NSM;;;;;N;;;;;
1CE2;VAIDIKA DAKSHINATAH ADHOGA;Mn;1;NSM;;;;;N;;;;;
1CE3;VAIDIKA JIHVAAMULIYA UPADHAMAANIYA ;Mc;0;L;;;;;N;;;;;
1CE4;VAIDIKA SVARITA DVI VAKRA KHANDA;Mc;0;L;;;;;N;;;;;
1CE5;VAIDIKA SVARITA UURDHVA DVI REKHAA;Mn;230;NSM;;;;;N;;;;;
1CE6;VAIDIKA SVARITA UURDHVA TRI REKHAA;Mn;230;NSM;;;;;N;;;;;
1CE7;VAIDIKA UURDHVA VAKRA REKHAA;Mn;230;NSM;;;;;N;;;;;
1CE8;VAIDIKA SVARITA ADHO VAKRA REKHAA;Mn;220;NSM;;;;;N;;;;;
1CE9;VAIDIKA SVARITA ADHAH ARDHA VAKRA ;Mn;220;NSM;;;;;N;;;;;
1CEA;VAIDIKA SVARITA ADHO NYUBJA ;Mn;220;NSM;;;;;N;;;;;
1CEB;VAIDIKA SVARITA ADHAH KONNA;Mn;220;NSM;;;;;N;;;;;
1CEC;VAIDIKA SVARITA ADHO REKHAA;Mn;220;NSM;;;;;N;;;;;
1CED;VAIDIKA SVARITA ADHO BINDU;Mn;220;NSM;;;;;N;;;;;
1CEE;VAIDIKA SVARITA ADHO SAMYUKT REKHAA;Mn;220;NSM;;;;;N;;;;;
1CEF;VAIDIKA KAMPA;Mn;0;NSM;;;;;N;;;;;
1CF0;VAIDIKA SVARITA URASI REKHAA;Mn;1;NSM;;;;;N;;;;;
1CF1;VAIDIKA PUSHPIKA;Po;0;L;;;;;N;;;;;
1CF2;VAIDIKA MAATRAAKAAL ;Mc;0;L;;;;;N;;;;;
1CF3;VAIDIKA TIRYAK;Mn;220;NSM;;;;;N;;;;;
1CF4;VAIDIKA SWASTIKA;So;0;L;;;;;N;;;;;
1CF5;VAIDIKA TRUTIKAA;Po;0;L;;;;;;;;;;;
A8E0;VAIDIKA SAAMASVARA ANKA SHUUNYA;Mn;220;NSM;;;;;;;;;;;
A8E1;VAIDIKA SAAMASVARA ANKA EKA UDATTA;Mn;220;NSM;;;;;;;;;;;;
A8E2;VAIDIKA SAAMASVARA ANKA DVI SVARITA;Mn;220;NSM;;;;;;;;;;;;
A8E3;VAIDIKA SAAMASVARA ANKA TRI ANUDATTA;Mn;220;NSM;;;;;N;;;;;
A8E4;VAIDIKA SAAMASVARA ANKA CHATUR;Mn;220;NSM;;;;;N;;;;;
A8E5;VAIDIKA SAAMASVARA ANKA PANCHA;Mn;220;NSM;;;;;N;;;;;
A8E6;VAIDIKA SAAMASVARA ANKA SHATT;Mn;220;NSM;;;;;N;;;;;
A8E7;VAIDIKA SAAMASVARA ANKA SAPTA;Mn;220;NSM;;;;;N;;;;;
A8E8;VAIDIKA SAAMASVARA ANKA ASHTTA;Mn;220;NSM;;;;;N;;;;;
A8E9;VAIDIKA SAAMASVARA ANKA NAVA;Mn;220;NSM;;;;;N;;;;;
A8EA;VAIDIKA SAAMASVARA ABHINIHITA;Mn;220;NSM;;;;;N;;;;;
A8EB;VAIDIKA SAAMASVARA NAMANA;Mn;220;NSM;;;;;N;;;;;
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A8EC;VAIDIKA SAAMASVARA RA;Mn;220;NSM;;;;;N;;;;;
A8ED;VAIDIKA SAAMASVARA KA;Mn;220;NSM;;;;;N;;;;;
A8EE;VAIDIKA SAAMASVARA U;Mn;220;NSM;;;;;N;;;;;
A8EF;VAIDIKA SAAMASVARA SVARITA EKARA;Mn;220;NSM;;;;;N;;;;;
A8F0;VAIDIKA SAAMASVARA SVARITA DVIU;Mn;220;NSM;;;;;N;;;;;
A8F1;VAIDIKA SAAMASVARA SVARITA TRIKA;Mn;220;NSM;;;;;N;;;;;
A8F2;VAIDIKA SAAMASVARA PRANNATAM;Mn;220;NSM;;;;;N;;;;;
A8F3;VAIDIKA SAAMASVARA VINATA;Mn;220;NSM;;;;;N;;;;;
A8F4;VAIDIKA SAAMASVARA DIRGIBAVA;Mn;220;NSM;;;;;N;;;;;
A8F5;VAIDIKA SAAMASVARA KARSHANNA;Mn;220;NSM;;;;;N;;;;;
A8F6;VAIDIKA SVARITA UURDHVA SHARA;Mn;220;NSM;;;;;N;;;;;
A8F7;VAIDIKA SAAMASVARA PRENKHA;Mn;220;NSM;;;;;N;;;;;
A8F8;VAIDIKA SAAMAGAAN YOGAKAAL;Mc;0;L;;;;;N;;;;;
A8FE;VAIDIKA PRARAMBHA CHIHNA;Cf;0;ON;;;;;N;;;;;
A8FF;VAIDIKA ANTHA CHIHNA;Cf;0;ON;;;;;N;;;;;
0900;VAIDIKA ADHOMUKHA CANDRABINDU;Mn;0;NSM;;;;;N;;;;;
0979;VAIDIKA LETTER JJYA;Lo;0;L;;;;;N;;;;;
097A;VAIDIKA LETTER LLHA;Lo;0;L;;;;;N;;;;;
```

Proposed revised text for R10

R 10: Other modifying marks, in particular bindus and svaras, apply to the orthographic syllable as a whole and should follow (in the memory representation) all other characters that constitute the syllable. The bindus should follow any vowel signs, and the svaras should come last. The relative placement of these marks is horizontal rather than vertical; the horizontal rendering order may vary according to typographic concerns. _**The Vaidika Swaraadi Chihnas, Vaidika Svaraankan Chihnas, Vaidika Saamasvara Chihnas are to be rendered above, below and/or right side of the syllable.**_

Existing Examples:

$$KA_n + AA_{vs} + CANDRABINDU_n$$

$$क \ + \ ◌ा \ + \ ◌̆ \ \rightarrow \ काँ$$

Additional Examples of Vaidika Swaraadi Chihna:

Class A: Single vowel syllable:

$$AA_n + VAIDIKA\ VISARGA_n$$

$$आ + ◌ः + ⊖ \rightarrow आ÷$$

Class B: Single consonant syllable:

$$KA_n + I_{vs} + VAIDIKA\ ANUSVAARA_n$$

$$क + ि◌ + ◌ं \rightarrow किं$$

$$HA_n + AA_{vs} + VAIDIKA\ ANUSVAARA_n + VAIDIKA\ TIRYAK + VAIDIKA\ SVARITA_n$$

$$ह + ◌ा + ◌ं + ◌ँ + ◌ँ \rightarrow हाँ$$

Class C: *Multiple consonant syllable:*

$$TA_n + VIRAMA_n + VA_n + VAIDIKA\ ANUSVAARA_n$$

$$त + ◌् + व + ◌ं \rightarrow त्वं$$

$$VA_n + II_{vs} + VAIDIKA\ ANUSVAARA_n + VAIDIKA\ SVARITA_{n +} SHA_n + VIRAMA_n + CA_n$$

$$व + ि◌ + ◌ं + ◌ं + श + ◌् + च \rightarrow विंश्च$$

Examples of Vaidika Svaraankan Chihna:

Class A: Single vowel syllable:

AA_n + VAIDIKA SVARITA$_n$

आ + ॑ → आ॑

Class B: Single consonant syllable:

MA_n + VISARGA$_n$ + VAIDIKA SVARITA$_n$

म + ः + ॑ → मः॑

Class C: Multiple consonant syllable:

SA_n + VIRAMA$_n$ + TA_n + U_{vs} + VAIDIKA SVARITA$_n$

स + ् + त + ु + ॒ → स्तु॒

Examples of Vaidika Saamasvara Chihna:

Class A: Single vowel syllable:

O_n + VAIDIKA SAAMASVARA$_n$

ओ + ॒ → ओ

Class B: Single consonant syllable:

THA_n + AA_{vs} + VAIDIKA SAAMASVARA$_n$

थ + ा + ॒ → था

Class C: Multiple consonant syllable:

TA_n + VIRAMA$_n$ + SA_n + U_{vs} + VAIDIKA SAAMASVARA$_n$

त + ् + स + ु + ॒ → त्सु

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Prof. R. K. Joshi
23 January 2008

ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]

A. Administrative

1. **Title:** *Proposal for Encoding Of Vaidika Characters & Symbols in Unicode*
2. Requester's name: *Department of Information technology, Ministry of Communications & IT, Government Of India*
3. Requester type (Member body/Liaison/Individual contribution): *Member Body*
4. Submission date:
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal: *Yes*
   (or) More information will be provided later: *No*

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters): *Yes*
      Proposed name of script: *Vaidika Extensions*
   b. The proposal is for addition of character(s) to an existing block: *No*
      Name of the existing block: *Not Applicable*
2. Number of characters in proposal: *68*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary   B.1-Specialized (small collection)   B.2-Specialized (large collection)   *B.1*
   C-Major extinct   D-Attested extinct   E-Minor extinct
   F-Archaic Hieroglyphic or Ideographic   G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided? *Yes*
   a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? *Yes*
   b. Are the character shapes attached in a legible form suitable for review? *Yes*
5. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for Publishing the standard? *CDAC Mumbai*
   If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used: *Fontographer V 4.1*
6. References:
   a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? *Yes*
   b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? *Yes*
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)? *Yes*

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 http://www.unicode.org/Public/UNIDATA/UCD.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

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[1] Form number: N3102-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)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?   *Yes*

    If YES explain   *The Proposal was submitted to UTC in 2003 (L2/03-066 and L2 /03-067) and it were also discussed in UTC#101.*
    The proposal was resubmitted to UTC in 2006 (L2/06-185).
    A further revised proposal was submitted to UTC in October 2007 (L2/07-395,396,397)

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?   *Vaidika Sanskrit Scholars, Linguists, IT experts working in language technology, Industry Representatives, Sanskrit Scholars etc.*

    If YES, available relevant documents:

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?   *Yes*

    Reference:

4. The context of use for the proposed characters (type of use; common or rare)   *The type of usage can be very from common to rare*

    Reference:

5. Are the proposed characters in current use by the user community?   *Yes*

    If YES, where? Reference: *Critically edited versions of Scholarly Publications*

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?   *Yes*

    If YES, is a rationale provided?   *Yes*

    If YES, reference: *The proposed characters are used in Indian Scripts*

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?   *Yes*

8. Can any of the proposed characters be considered a presentation form of an 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 composed character sequence of either existing characters or other proposed characters?   *No*

    If YES, is a rationale for its inclusion provided?

    If YES, reference:

10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?   *Yes*

    If YES, is a rationale for its inclusion provided?   *Yes*

    If YES, reference:

11. Does the proposal include use of combining characters and/or use of composite sequences?   *Yes*

    If YES, is a rationale for such use provided?   *No*

    If YES, reference:

    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?   *No*

    If YES, reference:

12. Does the proposal contain characters with any special properties such as control function or similar semantics?   *No*

    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: