9.4 IN SFOC (Indian Standard Font Code)- Devanagari

The draft layout for Devanagari Font Standard was published in the 5th issue of the TDIL news letter. Based on the feedback from user community and industries the proposed standard is slightly modified. The revised draft for the proposed Devanagari Font Standard is published here for comments/feedback. The proposed font standards are targeted towards the following class of users:

1. Data Processing
2. Office Users / Word Processing
3. Textbook Publishers
4. Web Content Creators
5. Desktop Applications

It is certainly not targeted towards professional desktop publishers, advertising agencies and highly Sanskritized text content creators.

The font is laid out such that the font remains unchanged between the character locations 0x80 to 0xFF in Monolingual and Bilingual Font layout. The monolingual font contains more compound characters and conjuncts.

Font Naming Convention

The fonts having the standard layout shall have a naming convention that will identify the script, monolingual / bilingual, type of numerals. This is implemented by attaching a preamble string to the actual name of the font. Following abbreviations will be used:

- DV: Devanagari
- GJ: Gujarati
- PN: Punjabi
- BN: Bengali
- AS: Assamese
- OR: Oriya
- KN: Kannada
- TM: Tamil
- TL: Telugu
- ML: Malayalam
- M: Monolingual Font
- B: Bilingual Font
- E: Roman Numerals
- L: Language Numerals

The preamble string shall have the following format:

L1 L2 - M/B E/L - Font Name

As illustrated above the first two letters denote the script of the font as per the abbreviation given above. The M/B field denotes whether the font is monolingual or bilingual. The E/L field denotes the type of numerals contained in the font. The field will contain E if the font contains Roman numerals and will contain L if the font contains the native numerals of the language script. The fields are separated by a underscore character. To fix this more clearly a bilingual Gujarati font ‘Narsi’ containing Gujarati numerals will have the preamble as GJ_BL_Narsi. A Punjabi monolingual font ‘Govind’ containing Roman numerals will have a preamble PN_ME_Govind.

Rules for Composing Devanagari Text

1. The Devanagari characters lying in the codes 0x80 to 0xFF are designed to be kept in the same location for Devanagari bilingual font. Here a majority of the consonants are kept in their half form. The full consonant is formed by adding a ‘kana’ (Vertical stroke- 0xE0) to the half form. It is recommended that the kana located at 0xE0 be used for that purpose. For example

   ग (0xAA) + ॥ (0xE0) = ग

2. There are two matras (Vowel Signs) of vowel ॕ (I) with different overhanging spans. These matras are located at 0x4C and 0xE3. The matra at 0x4C is used for the wider letters like क (Fa), fa (क) as shown below:

   क (0xA7) + ॥ (0x4C) = की
The matra at 0xE3 is used for other letters, which are not wider like Ma (म), Ra (र), Ya (य) etc. For example:

\[ \text{म} + \text{ि} (0xE3) = \text{मि} \]
\[ \text{र} + \text{ि} (0xE3) = \text{रि} \]

The matras shown at code points 0x4A and 0x4D are with the rakar (र Ra is coming in a syllable and being pronounced before the consonant to which it is applied) and with different overhanging spans. For example:

ए, स, अ, ए, उ, व, भ, ध, न, ब.

The matras shown at code points 0x4B and 0x4E are with the rakar & Anusvar and with different overhanging spans.

(3) Similarly, there are three types of the matras of vowel sign (इ) with different overhanging spans. These matras are located at locations 0xE1, 0xE2 and 0x4F. The matra at 0xE1 is used for normal size letters such as Ra (र), Ka (क), Fa (फ), dha (ध) etc. For example:

\[ \text{ि} (0xE1) + \text{र} (0xCA) = \text{िर} \]
\[ \text{ि} (0xE1) + \text{क} (0xA7) = \text{िक} \]

The other form of matra of vowel I (इ) is used for wider letters such as Sa (स), M (म), Ya (य) etc. For example:

\[ \text{ि} (0xE2) + \text{स} (0xC8 + 0x0E) = \text{िस} \]
\[ \text{ि} (0xE2) + \text{य} (0xCD + 0x0E0) = \text{िय} \]

The third form of the matra of vowel I (इ) is used when there is a half form of a consonant in a word. In this case the matra is attached to the ‘Kana’ (Vertical stroke) of the preceding consonant. For example in सक, नाग.

(4) The shifted ukar and ookar (Vowel signs for u and uu) located at 0x42 and 0x43 are to be used with characters which are not having full Kana and in this characters the matra is attached to the center lower part of the characters such as in डु, ढु, णु.

(5) The rakar located at ‘0xED’ is provided for characters क (Ka), फ (Pha), म (M a), भ (Bha), ध (Va), न (N a), ब (Ba), etc. This rakar is attached to the characters at slightly upwards shifted position (almost at the middle of Kana). For example as in वक, नग.

(6) The rakar located at 0x50 is provided for characters ग (G a), च (Ca), ज (j a), थ (Th a), ध (G ha), ध (D ha), य (Ya) etc. This rakar is attached to the characters at slightly downwards shifted position. For example वग्र, चज, याप्र.

(7) The widths of letters क (Ka), फ (Pha), र (RRu), र (Roo) etc. are reduced by the width of the fixed kern space located at 0xFD to ensure proper anchoring of matras.

(8) The widths of letters त (T Ta), थ (Th a), द (D a), द + द (Ta+Ta), थ + थ (Tha+Tha), etc. are reduced by the width of the fixed kern space located at 0xFE to ensure proper anchoring of matras.

(Courtesy: TDIL Programme Department of Information Technology Electronics Niketan, New Delhi-110003)
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Proposed Standardisation for DV-Monolingual