

9.4 INSFOC (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

$$\text{र (0xAA)} + \text{। (0xE0)} = \text{ऱ}$$

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

$$\text{क (0xA7)} + \text{ी (0x4C)} = \text{की}$$

The *matra* at 0xE3 is used for other letters, which are not wider like Ma (म), Ra (र), Ya (य) etc. for example

$$\text{म} + \text{ी (0xE3)} = \text{मी}$$

$$\text{र} + \text{ी (0xE3)} = \text{री}$$

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:

प्रार्थी, तुर्की .

The *matras* shown at code points 0x4B and 0x4E are with the *rakar* & *Anuswar* 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 र (Ra), क (Ka), फ (Fa), ड (dha) etc. For example

$$\text{ि (0xE1)} + \text{र (0xCA)} = \text{रि}$$

$$\text{ि (0xE1)} + \text{क (0xA7)} = \text{कि}$$

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

$$\text{ि (0xE2)} + \text{म (0xC8 + 0xE0)} = \text{मि}$$

$$\text{ि (0xE2)} + \text{स (0xCD + 0xE0)} = \text{सि}$$

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 the words स्थित, शक्ति etc.

(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, टू, यू .

(5) The *rakar* located at '0xED' is provided for characters क (Ka), फ (Pha), म (Ma), भ (Bha), व (Va), न (Na), 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

वक्र, नम्र.

(6) The *rakar* located at 0x50 is provided for characters ग (Ga), च (Ca), ज (Ja), थ (Tha), घ (Gha), ध (Dha), य (Ya) etc. This *rakar* is attached to the characters at slightly downwards shifted position. For example व्यग्र, वज्र, व्याघ्र .

(7) The widths of letters क (Ka), फ (Pha), रु (RRu), रू (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 (TTa), थ (Tha), द (Da), त + त (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
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		Proposed Standardisation for DV-Monolingual															
		0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
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1	SOH	DC1	!	1	.	२	२	५			अ		६	३	१	।	
2	STX	CD2	'	2	३	श	श	ब			इ	छ	४	४	१	ॐ	
3	ETX	CD3	#	3	४	३	श	भ			उ	५	५	५	१	श्र	
4	EOT	CD4	\$	4	५	४	रु	म			ऊ	६	६	६	०	३	
5	ENQ	NAK	%	5	६	ख	ख	य			ए		७	७	०	३	
6	ACK	SYN	&	6	७	ह	ह	ल			ऐ		८	८	०	३	
7	BEL	ETB	"	7	८	ह	ह	व			क	•	९	९	०	५	
8	BS	CAN	(	8	९	ख	ख	ष			व	०	१०	१०	०	५
9	HT	EM	)	9	१०	प	प	स			ख	१	११	११	०	५
A	LF	SUB	*	:	१	५	च	६			ख	२	१२	१२	०	३	
B	VT	ESC	+	;	१	[	ज	{			६	३	१३	१३	०	३
C	FF	FS	,	<	१	\	झ	|			६	४	१४	१४	०	३	
D	CR	GS	-	=	१	]	ल	}				४	१५	१५	०	(क)
E	SO	RS	.	>	१	^	थ	~			५	५	१६	१६	०	(ट)	
F	SI	US	/	?	१	_	ध	DEL			६	६	१७	१७	०	०	