

Control Characters (Joiners ZWNJ and ZWJ) in the Grantha Visible Virama and Chillu Consonants

Naga Ganesan (naa.ganesan@gmail.com)

1.0 Three Visual Forms of Grantha Consonants Occurring Together:

In L2/14-097 (<http://www.unicode.org/L2/L2014/14097-grantha-chillu-zwj.pdf>) the reasons for the need to represent Grantha chillu consonants are described. Malayalam is the closest script to Grantha, and because Malayalam is in BMP, some makers of the Grantha fonts suggest using Malayalam block since the SMP support for Grantha from Big IT companies such as Microsoft or Apple are some years away from implementation. There are some 30+ pre-pausal Chillu consonants in Grantha script repertoire, and these occur anywhere in the word in running text, inside the word or at the end of a word,. For example, the names of persons, mountains, South Indian place-names etc.,

3 Forms of Consonant groups in Grantha script

EXAMPLE 1:

Example Word	Grantha script	Description of Grantha script form
utkaTa	உதக	Vertical stack conjunct
utkaTa	உதகக	Ligating Virama form
utkaTa	உத ^ஃ கக	Visible Virama form

EXAMPLE 2:

Example Word	Grantha script	Description of Grantha script form
kaNvalaya	கணவய	Vertical stack conjunct
kaNvalaya	கணவய	Ligating Virama form
kaNvalaya	கண ^ஃ வய	Visible Virama form

Figure 1. Three Forms of Consonant Clusters in Grantha

Essentially, the user community desires to have control over where to display (a) vertical stacks (no joins) (b) pre-pausal consonants using ZWJ and (c) explicit virama using ZWNJ. This technically straight-forward request will remove any ambiguity in Grantha text representation and will be easy to rebuild the original Grantha script display from plain-text forms even if received in emails going through multiple platforms.

2.0 S. Sharma’s Solution using ZWNJ for both Explicit Virama and Pre-Pausal Chillu Forms:

In the document, L2/14-002, discussion is about the extinct script, Bhaikshuki that died out along with Buddhism in 13th century and this extinct script known only from very few inscriptions is not comparable to the living script, Grantha that has some 30 Chillu pre-pausal consonants. Also, the consonant NA form is extinct in modern Telugu and Kannada, and it has **old style** and **new style** fonts to handle this extinct form in rich-text solution because most users have not heard or use this NA at all. So, for these rare and unused form of a single case, changing fonts in rich-text format may be OK.

From page 1, L2/14-002, Sharma’s use of ZWNJ to represent Old style (Extinct) NA vs. the standard NA (Modern style). This Rich-text solution is cumbersome and involves change of fonts in Grantha as there is no Old style vs. New style fonts.

Old Style:	NA + VIRAMA + ZWNJ + DA	𑌎𑌃
New Style:	NA + VIRAMA + ZWNJ + DA	𑌎𑌃

Page 2, L2/14-002

Isolated by ZWNJ:	NA + VIRAMA + ZWNJ + DA	𑌎𑌃/𑌎𑌃
-------------------	-------------------------	-------





The Rich-Text way by changing fonts to write consonant NA (which is extinct in Telugu and Kannada) by change of Fonts is explained by Sriramana Sharma in L2/13-228. Not e that he uses ZWNJ for both forms of NA (and one form is not used nowadays).

Hence a font may display the isolate sequence NA + VIRAMA (where isolate means “not part of a consonant cluster”) as either the special nakaara-pollu 𑌎 or as the regular form 𑌎 as per the desired typographic style. In rich-text, smart font features may be used to specify a particular form in desired positions if needed for any reason.

Thus, it is sufficient to allow fonts to substitute NA + VIRAMA by the appropriate glyph as per the desired style. If a consonant follows but one desires to display a vowelless NA (whether as 𑌎 or 𑌎), one can always insert a ZWNJ after the VIRAMA.

3.0 Plain-Text Representation using ZWJ for the many Chillus present in Grantha text:

Page 4, L2/14-002 gives the same coded representation for Chillu vs explicit Virama forms using ZWNJ. And this should be avoided, and ZWJ joiner <Cons, Virama, ZWJ> will unambiguously represent Chillu Pre-pausal consonants in Grantha font.

TA + VIRAMA + ZWNJ + SA	த + ் +  + ஸ	→	கஸ
NA + VIRAMA + ZWNJ + DA	ந + ் +  + ட	→	ந்ட
RA + VIRAMA + ZWNJ + HA	ர + ் +  + ஹ	→	ரஹ
LA + VIRAMA + ZWNJ + SHA	ல + ் +  + ஸ	→	லஸ

Summary:

The Chillu situation is entirely different in Grantha, and Chillu consonant forms are ever present in its text. And it is all only in One style of Grantha text. Hence, the 30 Chillu consonants occur frequently in most of the words in Grantha text and the User needs control to distinguish clearly as where to employ chillu or explicit virama or stacked consonants. And, there is no Old style and New style fonts to switch from one another if one wants a Chillu form or some other form. The use of ZWNJ must be reserved for the explicit Visible Virama display, and not for the Chillu pre-pausal displays which has a joined shape can be represented using ZWJ. Hence, we request to allow using ZWJ joiner to represent Chillus of Grantha text, while reserving ZWNJ use for explicit Virama display of Grantha text.

It is clear we need to use Joiners when either Explicit Virama or Chillu-s in Grantha are needed by the User. Why use ZWNJ for both purposes? It is requested to use the control characters, ZWNJ for Explicit Virama and ZWJ for Chillu consonants and the semantic equivalence of the three presentation forms occurring anywhere in a word of the Grantha text shown in Figure 1 will be maintained by use of these joiners.

Thanks.