Proposal to encode Grantha Chillu Marker sign in Unicode/ISO 10646

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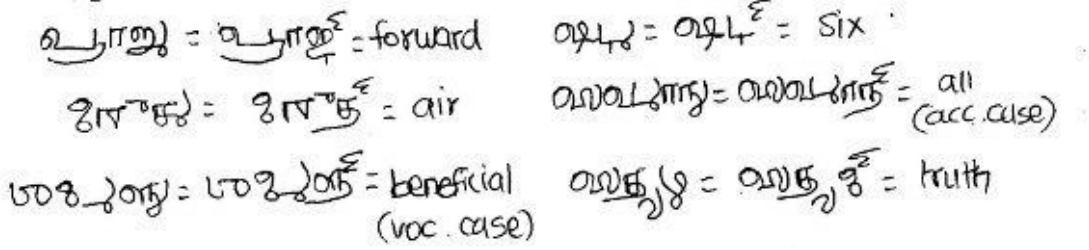
(a) Introduction

In the last few months, I discussed the number of viramas (3) proposed by Shriramana Sharma [L2/09-372] with a number of experts, both in Universities and traditional scholars, who use the script. Many of these professors were quite puzzled to hear about this 3rd virama, and confirmed that there is no such virama to encode by creating newly something called "touching" virama. For example, in L2/09-372 document itself, R. Krishnamurthi Sastri, (ex-Principal, Sanskrit College) explains:

[Begin Quote]

In the Grantha script, there are two ways of writing consonant sounds that are not followed by a vowel. Adding the vowel-absence-marker ◌് is one which is well known for all consonants. The other is the usage of a special 'vowelless' form, and is known only for some of the consonants. Whether the vowel-absence-marker is added, or the special vowelless form is used, either way no difference is created in the meaning of words:



[End Quote]

This report is the summary of the main points raised by Grantha user community and experts on problems of having a separate code point for the newly invented "touching" virama, a mere glyph variant of regular virama. Parallel situations in Tamil and Malayalam should be compared in order to understand the problem.

It will become very difficult to teach Grantha script to the Tamil user community and to use in Computers and Unicode if there are "touching" virama code point representations and this will put Grantha away and quite different from the Indic model.

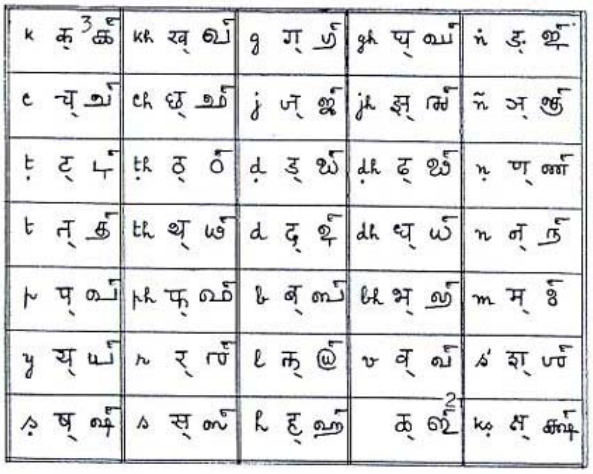
(b) Number of Viramas in the Descriptive Grantha Script textbooks:

All the available reference books on Grantha script, such as those used in schools, and University text books have been looked at thoroughly. It is significant that they register only two kinds of viramas: (I) Regular virama (U+1134D accepted in the UTC document, L2/10-071) and (II) Chillu (= *Pre-pausal*) virama consonants. A sample of books consulted to check whether they have "touching" virama are:

(i) K. Venugopalan, A primer in Grantha characters,
St. Peter, Minn: James H. Nye 1983.

http://dsal.uchicago.edu/digbooks/dig_toc.html?BOOKID=PK419.V468_1983

Consonants



(ii) P. Visalakshy, 2003, The Grantha Script, Dravidian Linguistics Association, St. Xavier's College, University of Kerala, Trivandrum, India.

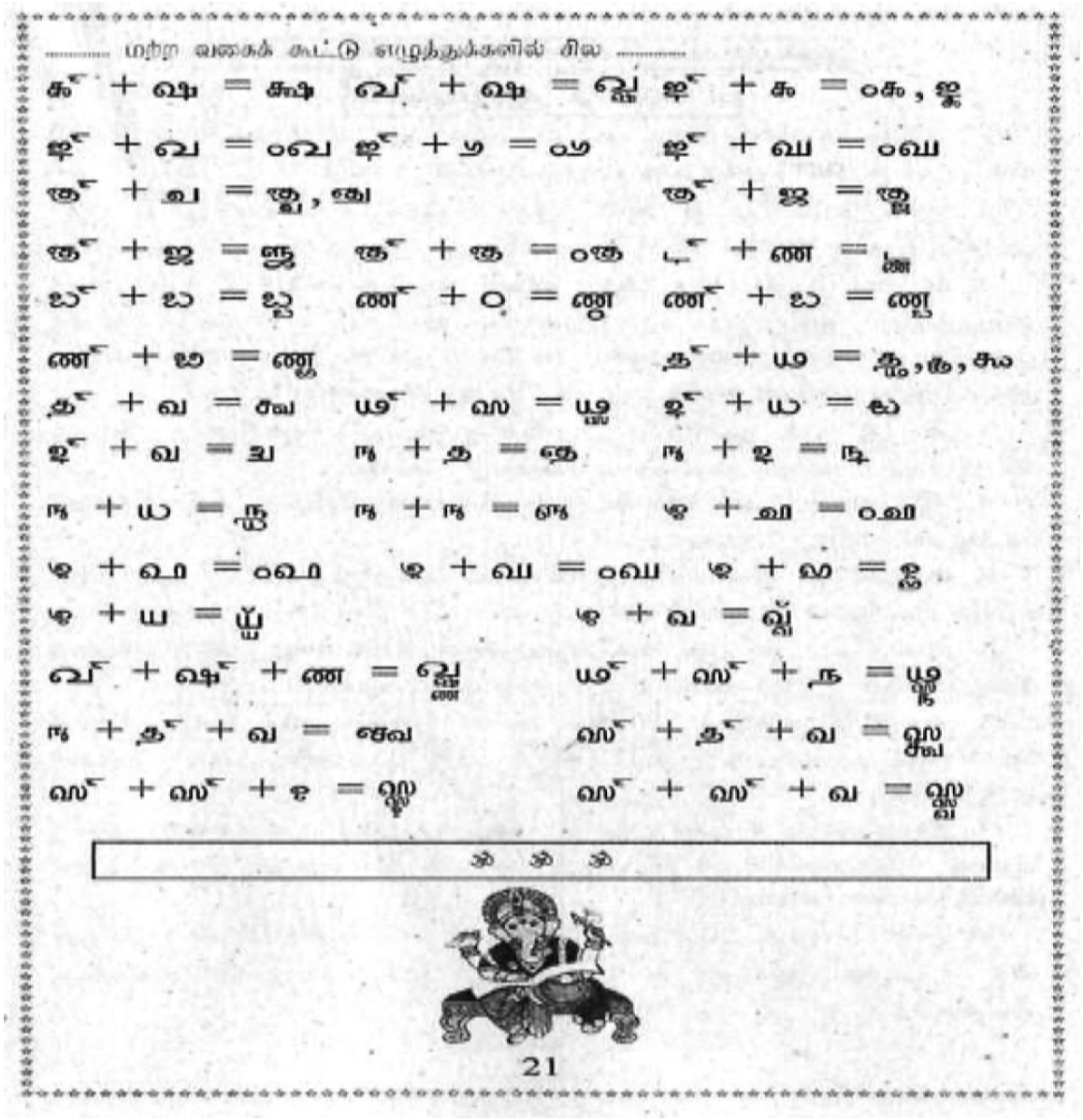
(iii) R. Gruenendahl, 2001, South Indian Scripts in Sanskrit Manuscripts and Prints Grantha Tamil – Malayalam – Telugu – Kannada – Nandinagari, O. Harrassowitz, Wiesbaden

(iv) M. A. V. Anantharama Sastri, Samskrta Pratama PaaTham, 1950, Kumbakonam, Tamil Nadu.

For example of the Viramas, please look at the very last Row, from Ref. (iv), shown below:

(v) R. Sridharan, An introduction to Grantha Lipi, 2001, Chennai

See the viramas while producing conjuncts on page 21. Please note the virama directly above consonants in ref. (i).



The newly proposed "touching" virama (by Sharma) is not seen in these Reference books on Grantha script at all. Note that the Chillu "pre-pausal" consonants are already *atomically* encoded in Unicode for the genetically closest script to Grantha, viz., Malayalam script. Given the large number of Chillus in Grantha, and the number of chillus employed highly depends on the user selection, atomic Chillu code points are **not** necessary. Instead, a Grantha Chillu marker sign will produce the Chillus as and when the user wants to employ a Chillu form for a consonant (by taking out the inherent /a/).

A logical place for the code point for the Chillu virama sign is proposed at U+1134E (L2/09-141r, page 9) just below the regular virama, U+1134D in Grantha code chart.

(c) Malayalam, the Closest genetically related script to Grantha script

Isaac Taylor (1829-1901), *The alphabet: an account of the origin and development of letters.* Vol. 2, page 356,

"From this lapidary alphabet two scripts were developed, a cursive and literary script. The first is represented by the Tamil, while the other has developed into the **Grantha** or 'book' alphabet used by the Tamil Brahmans for the Sanskrit transcriptions of their sacred books. **From it [i.e., Grantha script**] **are derived** two vernacular alphabets which are used on the Malabar coast; one is the Tulu Grantha (line 23), and **the other the Malayalam**, from which several characters were borrowed by the Christians of St. Thomas in order to supplement the Syriac (Karshuni) alphabet which they obtained from the Nestorian missionaries (see vol. i., p. 293.)"

Student's Brittanica India, 5 volumes, Editors: Dale Hoiberg and Indu Ramchandani, (2000) pg. 349 has the entry on Malayalam language.
"The earliest record of the language is an inscription dated to AD c. 830. An early extensive influx of Sanskrit words influenced the **Malayalam script (derived from the Grantha script**, itself derived from Brahmi): it has letters to represent all the Sanskrit sounds**,** besides the Dravidian sounds."

(d) Glyph Variation in the Regular Grantha Virama

The rare instance of "touching" virama occurs in old books, but not in the modern printed books. We do not find the archaic and rare touching virama nowadays, there is always a gap of 1 or 2 millimeters between the consonant and the regular virama (U+1134D). Even in old times, when print founts were being formed for Grantha, touching virama is indeed very rare.

As Rajarathna Bhattar (83 years old, Madurai, India) explained that there are only two viramas in the Grantha script. Sri. R. Bhattar and Dr. S. Raju, former Head, Dept. of Epigraphy, Tamil University, Thanjavur mentioned that the number of Grantha viramas should be checked with its closest relative, Malayalam script. Sometimes, in handwritten style, the stylus on palm leaves or pen on paper without being taken out writes out vowel signs, numerals, virama (e.g., *puLLi* in Tamil script as a small circle) continuously. For example, Tamil virama is written as *a dot, a circle or a line touching the consonant* (S. Raasu, Department of Epigraphy, Tamil University, Thanjavur, Tamil Nadu showed me samples from 19th century print books of Tamil and Malayalam) connected with the consonant. In modern print and computer web pages, this joining calligraphy better be avoided, according to these well known experts.

In Malayalam or Tamil, this glyph variant is *not* encoded as a separate "ligating virama" sign code point in Unicode at all. And, it will be a major mistake to encode this rare orthographic glyph variation as a separate touching virama code point for Grantha script.

In most modern Grantha books we do not find touching viramas at all. The evolution of Printing technology has separated all touching viramas, vowel signs or numerals like 10, 20, 30, … completely in Tamil and Malayalam scripts. That is the trend in Grantha script printing also, and needs to be followed in Computer representation as in Tamil and Malayalam scripts. The touching virama, a rare occurrence in 17^{th} or 18^{th} centuries should not be re-introduced into Grantha script just like touching viramas are not re-encoded either for Malayalam or Tamil scripts.

It will be a backward step, and does not serve any purpose since there is no semantic or significant orthographic difference by introducing it with an atomic code point. In the single example given by S. Sharma, please note there are some discrepancies mixed with non-touching viramas & one or two millimeter gap will not affect or add anything in meaning or visual typographic aesthetics at all. It is highly significant to observe the fact that the **glyph-variant of "touching" viramas** are only on a very small subset of consonants even in old books, NOT on the whole range of Grantha consonants. Hence, totally unnecessary to encode this glyph variation. Of course, in a particular font, if the font maker wants he can place a touching virama as stylistic glyph variants for one or two consonants in his fonts. But absolutely no need to have any *coded representation* for this glyph variation of style, just as we do not have separate code points for glyph variations of English letters. In Malayalam manuscripts, sometimes we do find *chandrakala* (virama) touching consonants, but nobody asks for a separate *atomic codepoint* for "touching" Malayalam virama!! Tamil virama, PuLLi, glyph variations are discussed in various sources. For example, in G. C. A. James, The Tamil script reform, pp. 102-140 in Language Standards and Their Codification: Process and Application (edited by J. D. Woods), University of Exeter, 1985.

(e) Grantha Chillus needed without ZWJ

Sharma's method of creating Chillu consonants is complicated. He uses **<consonant, zwj, ligating virama sign>** (pg. 35, L2/09-372) for a Chillu consonant. Why not this be simplified as <*consonant, chillu marker*>?

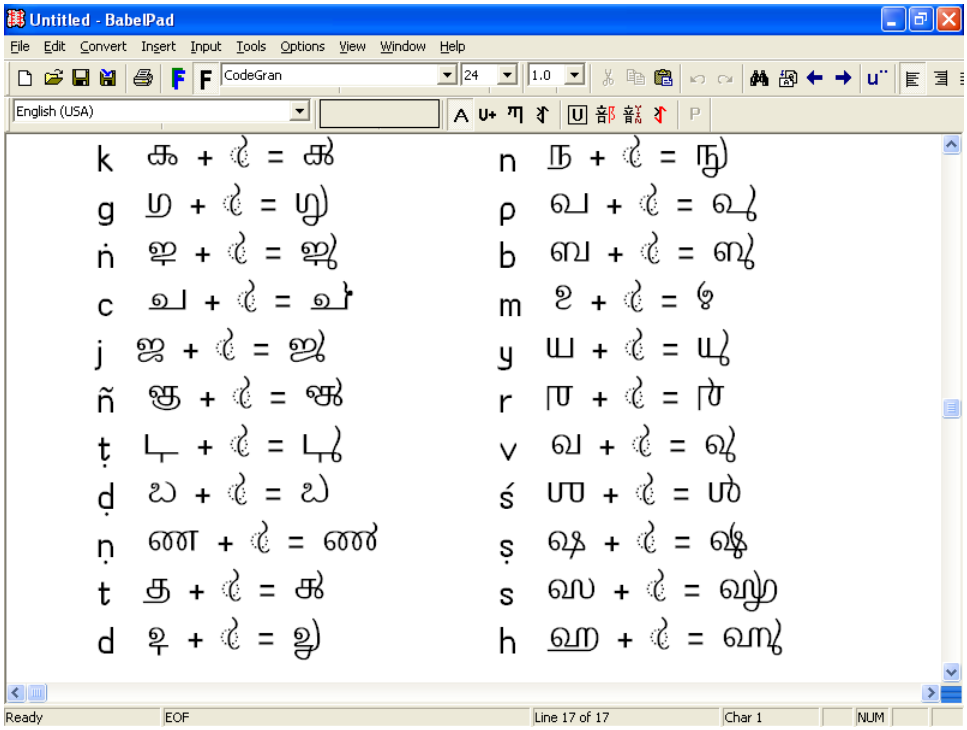
Grantha script has a bright future within Tamil community, and they need the Grantha script as a substitute for other Indic scripts to write Sanskrit, Hindi, Telugu etc., and the simple design with a *regular virama* codepoint to produce stacked consonants or visual virama, and Chillu consonants with a Chillu marker will be direct encoding model and easy to learn. Like the parallel Malayalam case, Chillus in Grantha script also do not need any ZWJ joiners.

(f) Grantha chillus are not the Default form

In S. Sharma's documents, we read that Chillu prepausal consonants be treated as default. If it is done in Unicode fonts, it will be major problem for the user community. The number of Grantha chillus could be as high as 30 or so. But the number of Grantha chillus a user will actually employ is rather small. The number of Chillus depends on User's choice. Many will settle with using just 5 or 6 chillus just as Malayalam, some may use 15, and others 20+ & so on. Hence, it will be highly problematic from a User perspective if Unicode Grantha fonts produce 25 Grantha chillus as default.

It will be very simple for user community if UTC gives a Chillu marker sign and let the user choose a chillu or regular virama for a consonant the way he likes. Forcing all Grantha “pure” consonants as chillus is problematic and unwarranted. Like in other Indic scripts, the default should be made with regular virama.

Grantha Pre-pausals <Consonant, Chillu Marker sign>



(g) Need for Conforming with Indic model

Grantha script, which is rare and hard to use compared to Tamil, needs to follow the Indic model w.r.t related Indian scripts to ensure a good future among general Tamil public. The reason is to teach and propagate the use of Grantha script among the ordinary Tamil public. That is the primary reason Tamils requested the Grantha code chart to be in the identical pattern as Tamil, Malayalam, Devanagari etc.. And, also the *special* 5 Dravidian letters (*RRA, LLLA, NNNA, short e & o*) to be present in the Grantha block (which are approved by UTC, Ref. L2/10-071). The three viramas, including a newly invented "touching" virama code point, and extensive use of joiners, and chillu viramas as default will be very confusing and become hard to teach the Grantha script among Tamils.

So, it is requested to encode Grantha script viramas following the well known and easy-to-understand Indic script models:

- regular virama sign as default
- chillu virama sign when a user needs and specifies it

For this, a separate chillu marker sign is the simplest of all models

Summary:

Sanskrit is very often written in Malayalam script. It is better to have a similar Encoding model between Malayalam and its closest relative, Grantha. In such an Encoding scenario in Unicode, the **transliteration** will become easy between Malayalam and Grantha scripts where the atomic Malayalam Chillus will be mapped to parallel Grantha Chillu sequences, <consonant, chillu marker sign>.

As in Malayalam, Grantha words or consonant clusters can be written using similar Unicode code point sequences. Here are two examples:

(a) <ma, ra, u, ta, chillu mark>

<ma, ra, u, ta, Virama>

(b) <ssa, tta, chillu mark>

<ssa, tta, Virama>

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