

## ***Malayalam NTA***

Notes, Illustrations and Discussions

Santhosh Thottingal

<http://thottingal.in>

01-09-2011

## Context

On 23<sup>rd</sup> August 2011, CDAC conducted a consultation meeting with Swathanthra Malayalam Computing to Discuss the various issues existing in IDN standard for Malayalam. One of the policy that SMC opposed was the allowed/recommended sequence of NTA ന് . CDAC had proposed ന് + ് + റ and SMC argued that it is incorrect in linguistic and technical sense. Even though the wrong sequence is part of the standard, SMC argued that the standard need to be corrected instead of going with the NTA with CHILLU+VIRAMA case. The language experts present in the meeting also agreed that the sequence is wrong. While discussing this, the reason for this wrong encoding was also came as a topic and SMC argued that the wrong encoding standard came as a result of a bug in Microsoft Kartika font. After the meeting Puneet Raheja , Program Manager- Windows Planning & PC Ecosystem Team asked documents on this issue so that they can look into the problem. This is that document.

### Notes on Malayalam – NTA (ന്)

In Unicode version 5.1.0, UTC recommended<sup>1</sup> to use CHILLU N + VIRAMA+ RRA for ന്. This set a wrong precedence wherein Unicode dictated how a character sequence was written instead of just defining the code points. Since the existing NTA formed by NA + VIRAMA+ RRA did not cause any issues, every body continued to use it. Meanwhile Microsoft's Kartika font had a bug in rendering this sequence<sup>2</sup> ( along with many other rendering issues). This was the default font for Malayalam locale in Microsoft's Windows and created a lot of confusion among users, input tool writers and this issue was finally brought to UTC. Using a VIRAMA after CHILLU is against all language rules of Malayalam. No rendering engine supports this kind of rendering and no Malayalam typographers want to make this mistake. Just canceling this remark in standard would be fine since nobody cared about that remark so far.

## Illustration of Issue

Sequences Rendered Using Meera, with Pango rendering engine, GNU/Linux

ന് + റ = ന്റ

ന് + റോ = ന്റോ

ന് + റെ = ന്റെ

ഹെ + ന് + റി = ഹെന്റി

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1 New characters in Unicode 5.1.0 version -

[http://unicode.org/versions/Unicode5.1.0/#Malayalam\\_Chillu\\_Characters](http://unicode.org/versions/Unicode5.1.0/#Malayalam_Chillu_Characters)

2 Discussion in Indic mailing list of Unicode, 2009 <http://www.unicode.org/~ecartis/indic/indic.2009-10>

ൻ + റോ = ഞറോ

ൻ+ റേ = ഞറേ

ൻ+ റെ = ഞറെ

Sequences Rendered Using Raghu Malayalam, Modern script font, with Pango rendering engine, GNU/Linux

ൻ + റ = ഞ

ൻ + റോ = ഞോ

ൻ + റെ = ഞെ

ഹെ + ഞ + റി = ഹെഞറി

ൻ + റോ = ഞറോ

ൻ+ റേ = ഞറേ

ൻ+ റെ = ഞറെ

Sequences Rendered Using Kartika, Modern script font, with Kartika, Windows 7

ൻ + റ = ഞ

ൻ + റോ = ഞോ

ൻ + റെ = ഞെ

ഹെ + ഞ + റി = ഹെഞറി

ൻ + റോ = ഞോ

ൻ+ റേ = ഞേ

ൻ+ റെ = ഞെ

Sequences Rendered Using Meera, Traditional script font, with Kartika, Windows 7

ന് + റ = ന്റ

ന് + റോ = ന്റോ

ന് + റെ = ന്റെ

ഹെ + ന് + റി = ഹെന്റി

ന് + റോ = ന്റോ

ന് + റേ = ന്റെ

ന് + റെ = ന്റെ

Sequences Rendered Using AnjaliOldLipi, Traditional script font, with Kartika, Windows 7

ന് + റ = ന്റ

ന് + റോ = ന്റോ

ന് + റെ = ന്റെ

ഹെ + ന് + റി = ഹെന്റി

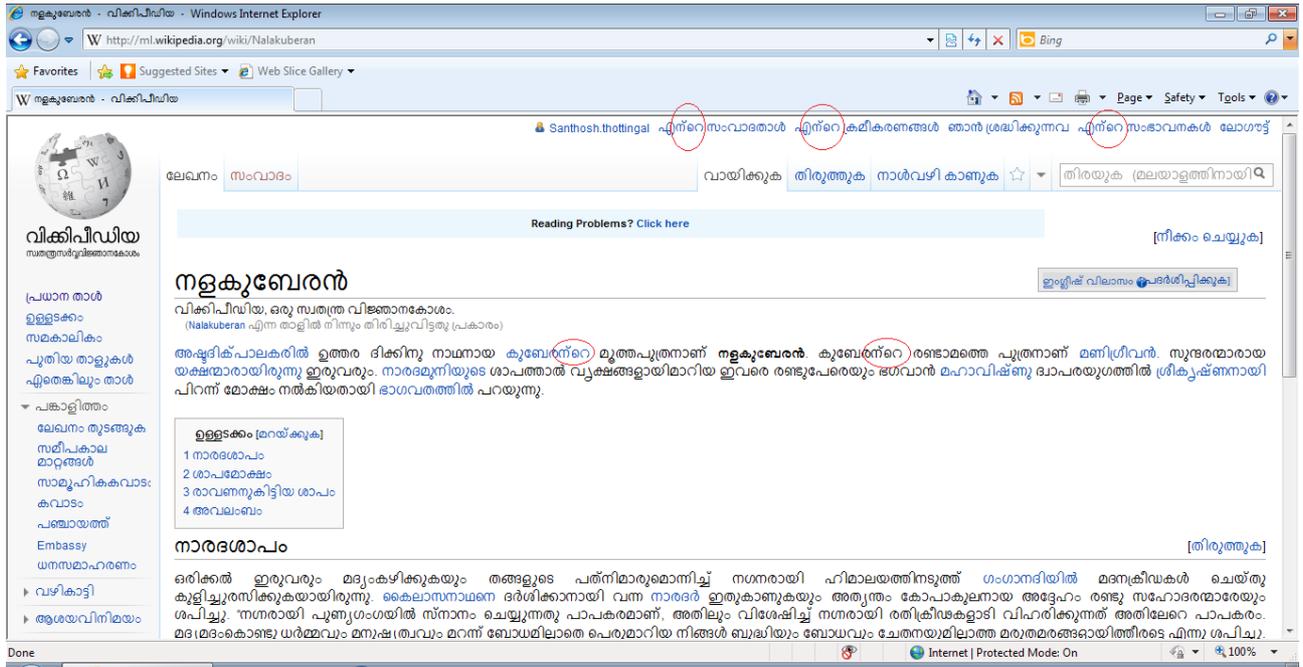
ന് + റോ = ന്റോ

ന് + റേ = ന്റെ

ന് + റെ = ന്റെ

Summary: The Kartika font alone differs from other Malayalam fonts.

Malayalam wikipedia as seen using Kartika font in windows 7. Or the default way windows users read malayalam wikipedia. See the circles in the screen shot



What government and CDAC says about writing NTA? - see <http://ur1.ca/4zyfw> It says

ൻ - ന്

But kartika font does not follow that.

## Mail thread from the Indic Unicode Mailing List.

### [indic] Representing Malayalam /nta/

**Mahesh T. Pai** <paivakil@gmail.com>

Reply-To: indic@unicode.org

To: indic@unicode.org

Fri, Oct 2, 2009 at 10:27 AM

Cibu C. J. said on Thu, Oct 01, 2009 at 10:08:50AM -0700,:

- > The correct encoding is: n\_chillu + virama + rra
- > [http://www.unicode.org/versions/Unicode5.1.0/#Malayalam\\_Chillu\\_Characters](http://www.unicode.org/versions/Unicode5.1.0/#Malayalam_Chillu_Characters)

Any reason why the chillu-n + virama + RRA was selected over

na + virama + RRA?

I think the latter was a better (linguistically appropriate) choice, since a dead consonant + virama does seem inappropriate to me. Because the Chillu is a dead consonant and the virama "kills" a consonant; you cannot "kill" a consonant twice. ;-)

- > <[http://www.unicode.org/versions/Unicode5.1.0/#Malayalam\\_Chillu\\_Characters](http://www.unicode.org/versions/Unicode5.1.0/#Malayalam_Chillu_Characters)>
- > On Thu, Oct 1, 2009 at 7:53 AM, Rajeev J Sebastian <[rajeev.sebastian@gmail.com](mailto:rajeev.sebastian@gmail.com)> wrote:
- >

- >> Btw, Ganesan, you still have not responded to how you want to encode
- >> nta-conjunct with your latest proposal. Should it be with
- >>
- >> nnna + v + rra, or
- >> nnna + v + tta, or
- >> na + v + tta, or
- >> na + v + rra (the current encoding)

--

Mahesh T. Pai || <http://paivakil.blogspot.com>

``Those willing to give up a little liberty for a little security deserve neither security nor liberty''

---

**N. Ganesan** <naa.ganesan@gmail.com>

To: indic@unicode.org

Sat, Oct 3, 2009 at 7:18 PM

Whatever is the sequence of nta with na, that sequence can also be done with nnna.

Chillu form of nnna =  $\text{൬}$  (glyph shape).

With a 5 or 6K list of alveolar n words, those who want to distinguish n with nnn is easy - just a small circle in nnn differentiates it from n. It's not hard at all to pick up.

N. Ganesan

[Quoted text hidden]

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cibu cj <cibucj@gmail.com>  
To: indic@unicode.org

Sat, Oct 3, 2009 at 11:42 PM

On Thu, Oct 1, 2009 at 9:57 PM, Mahesh T. Pai <paivakil@gmail.com> wrote:

Cibu C. J. said on Thu, Oct 01, 2009 at 10:08:50AM -0700,:

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Mahesh, There is no question of choice here. For good or bad, the decision is made - it is in the standard. So all the further discussion has only academic interest.

This is how I make sense of it (I didn't propose or make this choice): You have to view the Virama doing a rendering engine function. The function is:

- Combine the letters on both sides to form a ligature
- If ligature is not possible from the font, display a Chandrakkala between them.

Phonetics is not very important for Unicode anyway. Also, Virama is not inherent concept in the script - it is an artificial construct inherited from ISCII.

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Anivar Aravind <anivar.aravind@gmail.com>

Sun, Oct 4, 2009 at 8:18 AM

To: indic@unicode.org

On Fri, Oct 2, 2009 at 10:27 AM, Mahesh T. Pai <paivakil@gmail.com> wrote:

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- > since a dead consonant + virama does seem inappropriate to me. Because
- > the Chillu is a dead consonant and the virama "kills" a consonant; you
- > cannot "kill" a consonant twice. ;-)

For those who participate in the discussions here arguing about various linguistic/technical aspects of their languages, this may not be a good news. But the truth is bitter as always.

I wanted to reveal how once crucial decision for Malayalam was taken by UTC by ignoring all language rules.

I hope some of you remember the discussion on "nta" conjunct happened in this mailing list. The current way of representing nta is NA + virma+ RRA. And why this sequence is used is explained in Keralapanineeyam, the Malayalam grammer book by AR Rajaraja Varma

Mr. Cibu of Google Inc. proposed the same sequence for nta but when Unicode 5.1 was released what it defined was ATOMIC CHILLU N + VIRAMA + RRA. Recently in a discussion on this, Cibu explained how this decision was taken

<http://groups.google.com/group/smc-discuss/msg/af587795fc175676>

'ന്റ'യുടെ യുക്തി വിവരിക്കാൻ എനിക്ക് സാധിക്കുമെന്നു തോന്നുന്നില്ല. എന്നാലും നടന്നതെന്തെന്നു പറയാം.

ന്റ എന്നതു നിജപ്പെടുത്തണം (പറ്റുമെങ്കിൽ <na, virama, rra> എന്നതിലേയ്ക്ക്) എന്ന പ്രപ്പോസലുമായാണ് ഞാൻ utc-യെ സമീപിച്ചത്. എന്നാൽ ആ സീക്വൻസ് 'ന്റ' 'യ്ക്ക് വേണ്ടി മൈക്രോസോഫ്റ്റ് ഉപയോഗിച്ചിരുന്നതുകൊണ്ട് അവർക്കതു സീകാര്യമായില്ല. zwj ഇല്ലാത്ത ഏതെങ്കിലും സീക്വൻസ് ആണ് വേണ്ടിയിരുന്നത്. ഒരു റെൻഡറിംഗ് പോയിന്റ് ഓഫ് വ്യൂവിൽ 'ന്റ' എന്നതിനെ ചില്ലിന്റെ ഒരു conjunct ആയി കാണാവുന്നതുകൊണ്ട്, അടുത്ത ബെസ്റ്റ് ഓപ്ഷനായി അത് സ്വീകരിക്കപ്പെട്ടു. 'റ' എന്നതിന്റെ സബ്സ്ക്രിപ്റ്റ് <virama, rra> എന്നാണല്ലോ ഉണ്ടാക്കുക.

English Translation

"I don't think I can explain the logic of 'nta'. But I will tell you

what happened.

I approached the UTC with the proposal to fix the nta, if possible with <na , virama, rra>

**But that sequence were used by Microsoft for ന്റ (nrRa) and they could not accept it.**

Some sequence without ZWJ was required. In a rendering point of view, the nta can be considered as conjunct of chillu, the next option was selected. The subscript of RRa makes <virama, rra> , right?"

**Breaking a Language Rule for fixing a Buggy encoding by a proprietary vendor's incorrect usage is not acceptable at all.**

This is raising serious concerns about "what UTC cares" when giving directives on conjunct formation. Is it just about saving proprietary vendor interests to save their buggy encoding schemes by Ignoring all the basic logic of language & conjunct formation.

Bug in microsoft's kartika font is a known fact,. thats why Most of the malayalam community staying away from that font . Fixing a Bug with changing standard is unacceptable. It will only result in the loss of trust in the standardization body and discussions here

Anivar

[Quoted text hidden]

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"[It is not] possible to distinguish between 'numerical' and 'nonnumerical' algorithms, as if numbers were somehow different from other kinds of precise information." - Donald Knuth

---

**N. Ganesan <naa.ganesan@gmail.com>**  
To: Indic Discussion List <indic@unicode.org>

Sun, Oct 4, 2009 at 6:01 PM

On Sat, Oct 3, 2009 at 9:48 PM, Anivar Aravind <anivar.aravind@gmail.com> wrote:

> On Fri, Oct 2, 2009 at 10:27 AM, Mahesh T. Pai <paivakil@gmail.com> wrote:

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**I think it would have been better if virama was not used for the "nta" stack.**

A solution with zwj for both this conjunct (if at all necessary) and also for the old reph form was possible then.

N. Ganesan  
[Quoted text hidden]

Anivar Aravind <anivar.aravind@gmail.com>  
To: "N. Ganesan" <naa.ganesan@gmail.com>  
Cc: Indic Discussion List <indic@unicode.org>

Sun, Oct 4, 2009 at 6:34 PM

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Your point is simply wrong as per Malayalam grammer.  
'khara' Character (first letter in each consonant group, which is a sound originated from throat) each vargam (consonant group) will combine with "Anunasika"(Nasal) sound and make conjuncts like following

ka + virama+ nga = nka ക്ക+virama+ ണ = ക്കണ  
cha +virama+ nja = ncha ച്ച+virama+ ണ = ച്ചണ  
TA + virama+ NA = Nta ട്+virama+ ണ = ട്ണ  
TTA+ virama+ NNA = nta ( TTA and NNA does not have a lipi , and represented using RRA and NA ) റ്റ+virama+ റ്റ = റ്റ്റ  
tha+ virama + na = thna ത്ത+virama+ റ്റ = ത്റ്റ  
pa +virama+ ma = mpa പ്+virama+ മ = പ്മ

Now UTC already breaked this basic rule by changing the standard instead of fixing Microsoft's font bug .

Anivar

Santhosh Thottingal <santhosh00@gmail.com>

Sun, Oct 4, 2009 at 8:04 PM

To: Anivar Aravind <anivar.aravind@gmail.com>

Cc: "N. Ganesan" <naa.ganesan@gmail.com>, Indic Discussion List <indic@unicode.org>

On Sun, Oct 4, 2009 at 6:34 PM, Anivar Aravind <anivar.aravind@gmail.com> wrote:

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Yes, these conjuncts are formed by this order : anunasika + virama+ kharam

It seems anivar reversed the order while explaining this.

> ka + virama+ nga = nka ക+virama+ ണ = ക്ക

ണ + ള് + ക = ക്ക

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റ + ള് + ത = ത്ത

> pa +virama+ ma = mpa പ+virama+ മ = പ്ത

മ + ള് + പ = പ്ത

Same way nta is formed by NNNa + virama+ TTTA. But since these two letters does not exist in Malayalam, the glyphs used were of NA and RA. And currently it is written as റ്റ = na+ virama+Ra = റ + ള് + റ

There is no question of introducing chillu na here as per the above rules. It was just a bug in Kartika font/Windows not to render this correctly. But bug is now standard. None of the rendering engine support this chillu+ virama+ RA sequence now. People continue to write in NA+virama+ RA way. And this is what being taught in schools of Kerala now(Malayalam typing is part of Syllabus now)

-Santhosh

Anivar Aravind <anivar.aravind@gmail.com>

Sun, Oct 4, 2009 at 8:14 PM

To: Santhosh Thottingal <santhosh00@gmail.com>

Cc: "N. Ganesan" <naa.ganesan@gmail.com>, Indic Discussion List <indic@unicode.org>

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 > മ + റ്റ + പ = മ്പ  
 >

Thanks santhosh for correcting

I meant the same but was Typed it wrong. I was little absent minded while typing it.

It is the conjunct by nasal sound + khara sound in a varga

nga+ virama+ ka  
 nja+virama+cha = ncha  
 NA+virama+Ta = NTa  
 NNNA+ TTA = nta  
 na+virama+tha = ntha  
 ma+virama+pa = Mpa

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 > letters does not exist in Malayalam, the glyphs used were of NA and  
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**N. Ganesan** <naa.ganesan@gmail.com>  
 To: Indic Discussion List <indic@unicode.org>

Sun, Oct 4, 2009 at 8:28 PM

[Quoted text hidden]

This is what is written in Tamil also. fyi.

[Quoted text hidden]

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**Rajeev J Sebastian** <rajeev.sebastian@gmail.com>

Sun, Oct 4, 2009 at 8:41 PM

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Chitrajakumar and Gangadharan has already explained this Dravidian pattern in their document submitted to UTC several years ago - Problems of Malayalam Encoding.

UTC decided to ignore this while encoding the NTA using chillu-na.

Regards

Rajeev J Sebastian

---

**Mahesh T. Pai** <paivakil@gmail.com>

Sun, Oct 4, 2009 at 11:51 AM

Reply-To: indic@unicode.org

To: indic@unicode.org

I am not subscribed to smc-discuss; and this is a surprising revelation for me.

Anivar Aravind said on Sun, Oct 04, 2009 at 08:18:25AM +0530,:

> I approached the UTC with the proposal to fix the nta, if possible  
> with <na , virama, rra> But that sequence were used by Microsoft  
> for ന്റ (nrra) and they could not accept it.

Does this conjunct exist?

What I am concerned about is this - if the sequence is displayed in a rendering system which does not support the old lipi (at least one without an /nta/ stacked glyph), it should display a

<chillu n + independent RRA>

sequence.

However, with the given standards, the display will be

<chillu n + explicit virama + independent RRA>

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Mahesh T. Pai || <http://paivakil.blogspot.com>

A: Because it fouls the order in which people normally read text.

Q: Why is top-posting such a bad thing?

A: Top-posting.

Q: What is the most annoying thing on usenet and in e-mail?

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**Santhosh Thottingal** <[santhosh00@gmail.com](mailto:santhosh00@gmail.com)>

**Mon, Oct 5, 2009 at 9:33 PM**

To: [indic@unicode.org](mailto:indic@unicode.org)

On Sun, Oct 4, 2009 at 11:51 AM, Mahesh T. Pai <[paivakil@gmail.com](mailto:paivakil@gmail.com)> wrote:

> What I am concerned about is this - if the sequence is displayed in a

> rendering system which does not support the old lipi (at least one

> without an /nta/ stacked glyph), it should display a

>

> <chillu n + independent RRA>

>

> sequence.

>

> However, with the given standards, the display will be

>

> <chillu n + explicit virama + independent RRA>

"Microsoft nta" -the nta with chillu n, cannot be rendered by any rendering engine that exists now. Even Windows 7 can not render this sequence. While "Malayalam nta" can be rendered by any rendering engine. And what is taught in schools of Kerala as part of IT syllabus is "Malayalam nta" and not "Microsoft nta".

Thanks

Santhosh

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**Ralminov Rosnovski** <[ralminov@gmail.com](mailto:ralminov@gmail.com)>

**Thu, Oct 29, 2009 at 11:55 PM**

To: [indic@unicode.org](mailto:indic@unicode.org)

എൻ്റാമോ !

So can anyone here tell me how many "malayalams" are currently available ?

Do we have to wait for Unicode 6.9 standard to do our coding in malayalam ?

Every new version breaks existing one. The "stability principle" is not applicable to Malayalam.

I didn't see any need in participating in "academic" discussions here, because the decision making body is not at all academic.

Please notify us when the "standardizing" procedure is over, so that I can make some tools, drivers, fonts etc

Regards to everyone.

Ralminov

[Quoted text hidden]