

# Proposal to encode 0C5A TELUGU LETTER RRRA

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## §1. Character to be encoded



0C5A TELUGU LETTER RRRA

## §2. Background

Apart from the archaic Telugu LLLA, which is graphically related to the old Telugu RRA, there is also evidence for another related character in inscriptions written as  $\ominus$  or  $\text{ఱ}$ . The Telugu epigraphical publication *Telugu Śāsanālu* (ref 1) speaks on this (on p 4) as follows:

ఇంకొక యక్షరము  $\ominus$  లేక ద<sup>॑</sup> ఇది దంత్య 'థ' కారముగాదు వై  
జెప్పిన 'ఱ' కంటె రెండు మూడు శతాబ్దాలు పూర్వమే యిది శాసనములందు  
సైతము ఉపయోగమునుండి తొలగెను. నన్నయభట్టు నాటికే యిది శాసనలో  
లేదు. సంయుక్తక్షరములలో 'న' 'ణ' తో కలిసి యుండెడిది న్ణ, ణ్ణా,  
మాన్ఱు: చాణ్ణా ద్దాకు, చ దు (మూడు, చాణ్ణాలురకు, చెడు) మున్నగు  
పదములలో శాసనగును. కలమళ్ల శాసనములో 'ధనంజయుడు రేనాణ్ణు,  
పశన్ చిఱుంబూరి రేవణకాలు....' అని దు, ఱులు రెండు వ్రాయబడి యుండు  
టను బట్టి  $\ominus$  ఱులు భిన్నాక్షరములనవలెను అట్లే రామేశ్వరము (వ్రాద్ధుటూరు)  
శాసన మొకదానిలో ఱ, ఱ.  $\ominus$ , డ, ళ, లు స్పష్టముగా వ్రాయబడి యున్నవి  
గనుక నవి యన్నియు భిన్నాక్షరములే యగును. వై జెప్పిన 'ధనంజయుడు'

*Another letter  $\ominus$  (or దే) is (in inscriptions similar to but) not the dental థ.  
This went entirely out of use from inscriptions two or three centuries before  
 $\text{ఱ}$  became outmoded, as explained above. This is also not present (as a  
distinct character) in the language of Nannayya Bhaṭṭa. It is seen to form*

consonant clusters with *na* and *ṇa*. ... In the inscriptions of Kalamalla ...  $\ominus$  and  $\oslash$  are both distinctly seen to be used. Further in the Rāmeśvara (Prodduṭūru) inscription,  $\oslash$ ,  $\ominus$ ,  $\oslash$  and  $\oslash$  are all seen to be clearly used, indicating that they are all distinct characters.

Thus  $\ominus/\oslash$  is a distinct character worthy of encoding. It is however clearly phonologically related to  $\oslash$  RRA/*ra* as seen in its usage in words like *mūnru* (old Dravidian, “three”).

It has been suggested (ref 2) that in the early Telugu language, the alveolar stop  $\underline{t}/\underline{d}$  was phonemically distinct from the alveolar trill  $\underline{r}$  (at least for a brief period of time):

*A careful analysis of the reflexes of Proto-Dravidian  $*\underline{t}$  in Central Dravidian languages shows that there is sufficient evidence for reconstructing not one, but two separate phonemes in its place – a stop ( $*\underline{t}$ ) and a resonant ( $*\underline{r}$ ).*

It is possible that the representation  $\ominus/\oslash$  in contrast with its relative  $\oslash/\oslash$  was used to indicate the alveolar stop in contrast to the alveolar trill.

It should be noted that  $\ominus/\oslash$  is also related to  $\oslash$  DDA, as it is the character which it mostly degrades to or merges with later on, as in *mūḍu* (modern Telugu, “three”).

### §3. Attestation

The attestation is of two kinds. One is from epigraphs, as for example:



(ref 3, inscription #15, previously mentioned as that of Rāmeśvara/Prodduṭūru; occurrences of  $\ominus/\oslash$  are circled in red, with one of the contrasting  $\oslash$  in pink)



However, with today's font technology there is no difficulty in proper typesetting in the case of the vowel signs:

అ డా డి డీ డు డా డె డే డై డొ డో డౌ

... or in producing conjoining forms, so as to render a more appropriate transcription, as in the following rendering of the Rāmeśvara epigraph:

నసిపసుణ్ణు వడి ...

... పినస్వామి ... అశ్వమేధంబు ...

పెమ్మకొంఱు పులయూరియు ఫలంబు గాన్చున్ దేని

ఱచ్చిన రాజనాకు ఇమ్మాన్ఱు ధమ్మకవుళు ఱచ్చిన

చఱ గట్టున్ దేని ఱచ్చిన రాజ క్షిన్ఱు న్ఱున[క]ర

ంబుం పాఱుం చాన్ఱాకాపాకు[క్క] ఇచ్చు ఱకట్టున్ [అ]

Therefore there is no need to support the DA-2 written forms as they are merely a stopgap measure for lack of glyphs. It is sufficient to encode the attested character ఱ/ఱ.

#### §4. Choice of representative glyph

It has been noted that the character under discussion has two forms:



The form on the left is the older one after the simpler glyphs descended from Brahmi, and the form on the right is the more cursive one of later writings, as seen in the evolution chart on the right: (ref 4 p 80)

Of course, one may possibly rarely see both forms in the same writing sample but there is no doubt that they are equivalent presentations of the same character.

Roman transliteration	...	ɽ	ẓ
...	...	...	...
Śālamkāyana Telugu–Kannāḍa script 5th cent CE		⊕	⊖
Pallava Tamil Grantha 7th cent CE		𑀓	𑀔
Telugu–Kannāḍa 7th cent AD	...	⊕	⊖
Eastern Cājukyan 10th cent CE		⊕	⊖
Rājarājanarendra Telugu–Kannāḍa 11th cent CE		⊕	⊖
Kākati Gaṇapati 13th cent CE		⊕	⊖

This proposal recommends that the form on the right be used as the representative glyph because the proposal is as part of the modern Telugu script and this is the form chronologically more recent and hence stylistically coherent with modern Telugu writing.

## §5. Collation

As this character was never part of literary Telugu, it has never been collated. As such it is advisable to not disturb the existing order of collation and place this character at the end. However, we are also submitting a separate proposal for Telugu LLLA. which is also absent from literary Telugu. RRRA is however unique to old Telugu and not found in any other languages unlike LLLA, and hence it is advisable to place it *after* LLLA to isolate it. Hence:

YA < RA < LA < VA < SHA < SSA < SA < HA < LLA < K·SSA < RRA < LLLA < RRRA

## §6. Unicode Character Properties

0C5A;TELUGU LETTER RRRA;Lo;0;L; ; ; ; ;N; ; ; ;

The codepoint 0C5A is chosen to place this along with the other historic Telugu characters TSA and DZA at 0C58 and 0C59. The name RRRA is chosen as this character is most closely related to the existing RRA character and since ‘RRRA’ has not been used so far in Indic.

Other properties like linebreaking are as for standard Indic consonants.

## §7. References

- 1) Telugu Śāsanālu, Ed. Dr P V Parabrahma Shastri, Andhra Pradesh Sahitya Akademi, Hyderabad, 1975
- 2) “The three-way phonological distinction in Dravidian coronal consonants”, George Starostin, Aspects of Comparative Linguistics, v. 4. Moscow: RSUH Publishers, 2009, pp. 243-260
- 3) Inscriptions of Andhra Pradesh: Cuddapah District - I, Ed. Dr P V Parabrahma Shastri, Dept of Archaeology and Museums, Govt of Andhra Pradesh, 1977
- 4) The Dravidian Languages, Bhadriraju Krishnamurthy, Cambridge University Press, Cambridge, 1<sup>st</sup> South Asian Edition, 2003, ISBN: 978-0-521-77111-5

## §8. Official Proposal Summary Form

(Based on N3902-F)

### A. Administrative

1. Title

**Proposal to encode 0C5A TELUGU LETTER RRRRA**

2. Requester's name

**Shriramana Sharma, Suresh Kolichala, Nagarjuna Venna, Vinodh Rajan**

3. Requester type (Member body/Liaison/Individual contribution)

**Individual contribution**

4. Submission date

**2012-Jan-18**

5. Requester's reference (if applicable)

6. Choose one of the following: This is a complete proposal (or) More information will be provided later

**This is a complete proposal.**

### B. Technical – General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters), Proposed name of script

**No**

1b. The proposal is for addition of character(s) to an existing block, Name of the existing block

**Yes, Telugu**

2. Number of characters in proposal

**1 (one)**

3. Proposed category

**Category B1, specialized small (for this character)**

4. Is a repertoire including character names provided?

**Yes**

4a. If YES, are the names in accordance with the “character naming guidelines” in Annex L of P&P document?

**Yes**

4b. Are the character shapes attached in a legible form suitable for review?

**Yes**

5. Fonts related:

a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

**Shriramana Sharma**

b. Identify the party granting a license for use of the font by the editors (include address, e-mail etc.)

**Shriramana Sharma, based on the GPL-ed Pothana font © K Desikachary**

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

**Yes**

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

**Yes**

7. Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

**Yes**

8. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script.

**See detailed proposal.**

### C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

**No**

2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?

**Yes**

2b. If YES, with whom?

**Dr Bhadriraju Krishnamurti, retd from Osmania University, Hyderabad. Dr N S Ramachandra Murthy, Government Oriental Manuscripts Library & Research Centre, Hyderabad.**

2c. If YES, available relevant documents

**None specifically. The matter was discussed in person and via email/phone.**

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?

**Epigraphists who desire to transcribe ancient Telugu inscriptions etc into the modern script**

4a. The context of use for the proposed characters (type of use; common or rare)

**Rare**

4b. Reference

**See detailed proposal.**

5a. Are the proposed characters in current use by the user community?

**The character is used by epigraphists.**

5b. If YES, where?

6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?

**Yes**

6b. If YES, is a rationale provided?

**It belongs in the Telugu block which is in the BMP.**

6c. If YES, reference

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?

**Only one character is proposed. It is to be placed contiguous with other historic characters.**

8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?

**No**

8b. If YES, is a rationale for its inclusion provided?

8c. If YES, reference

9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

**No**

9b. If YES, is a rationale for its inclusion provided?

9c. If YES, reference

10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?

**No.**

10b. If YES, is a rationale for its inclusion provided?

10c. If YES, reference

11a. Does the proposal include use of combining characters and/or use of composite sequences?

**No**

11b. If YES, is a rationale for such use provided?

11c. If YES, reference

11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

12a. Does the proposal contain characters with any special properties such as control function or similar semantics?

**No.**

12b. If YES, describe in detail (include attachment if necessary)

13a. Does the proposal contain any Ideographic compatibility character(s)?

**No**

13b. If YES, is the equivalent corresponding unified ideographic character(s) identified?

13c. If YES, reference:

-O-O-O-