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Title: Revised proposal to add characters used in Lithuanian dialectology to the UCS

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The "baseline modifier letters" are dropped (as unification with subscript letters is considered acceptable).

Some code points are adjusted.

An explanation why the proposed "vertical lines" are in fact "vertical" is added.

More examples to show the contrastive use of the proposed "n with inwards hook" and the already encoded "eng" are added as fig. 1930a-65 and 1930a-88.

1. Introduction

It has always been the standard practice in the study of Lithuanian dialects to write the dialect texts in detailed phonetic transcription. The phonetic alphabet used to transcribe Lithuanian dialects, based on the so-called Copenhagen Scheme of Phonetic Transcription and Transliteration of 1925, an erstwhile rival to the IPA – see

http://books.google.com/books?ei=L0GXTLiMOIPL0MXaxlqJ&ct=result&hl=lt&id=R8IsAAAAAAAJ&dq=Phonetic+transcription+and+transliteration&q=association+internationale+#search_anchor

– was adopted for the study of Lithuanian dialects by Jurgis Gerulis (also known by the German form of his name as Georg Gerullis, 1888–1945) in 1930 (see References), and finally elaborated by the leading specialist in Lithuanian dialects, Aleksas Girdenis (b. 1937). The Lithuanian Phonetic Transcription is in many ways similar to the International Phonetic Alphabet, and shares some characters with this; but it also has significant differences. Some Lithuanian scholars have proposed switching to the pure IPA system, but it seems that it might be too late: over time, too many linguistic works have been produced using the traditional system, so that the transition would be too difficult to be practical. As it is, nowadays we refer to the Lithuanian Phonetic Transcription System (or Lithuanian Phonetic Alphabet), which is the standard means of recording Lithuanian dialects on paper for all linguistic purposes. There are still a number of characters from the Lithuanian Phonetic Transcription which have not yet been covered by the Unicode Standard. The present application is to submit these characters for the inclusion into the Unicode set.

2. Encoding Considerations

2.1 The letters

The proposed letter U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK is used in contrast to U+014B LATIN LETTER SMALL ENG (see fig. 1930a-XIXa), and therefore cannot be unified with this.

Regarding the form of the letters “with inwards hook”, with the selection of the reference glyphs, we follow modern typography (see fig. 2001a-344b), showing a dot-like termination. Older typography may show a tight curl ending in a smaller dot (see fig. 1930a-XIXb). In no case, the glyphs show a distinctive closed loop.

2.2 The intonation marks

The ten intonation marks, proposed as U+AB90...AB99, comprise a set where the designs of the elements are correlative to each other and subject to a common design principle. The angle deviation from the vertical is less than 30°.

There, any unification of the “simple” forms (proposed as U+AB90 MODIFIER LETTER SLANTED UP ARROW and U+AB91 MODIFIER LETTER SLANTED DOWN ARROW) with the “usual” 45° arrows (U+2197 NORTH EAST ARROW, U+2198 SOUTH EAST ARROW) would disrupt this set and make it unusable for accomplishing high-level typography for works on Lithuanian dialectology. Therefore, the whole set is proposed.

The intonation marks are given as modifier letters, in analogy to all characters in the Modifier Tone Letters block (A700...A71F). Also, they behave like letters on kerning and linebreaking, and some of them have special positions (like “middle”) which refer to letter design.

As it is to be expected for phonetics, all text specimens are found typeset in italics. However, the intonation marks (AB90...AB99) are slanted by design, retaining the symmetry of the angle of the upward and downward marks independent of the appliance of italics.

2.3 The vertical lines

The proposed U+2E4E DOTTED VERTICAL LINE and U+2E4F WIGGLY VERTICAL LINE comprise a set together with U+007C VERTICAL LINE and U+2016 DOUBLE VERTICAL LINE, to indicate several kinds of speech pauses between words.

To achieve a consistent view in high-level typography for works on Lithuanian dialectology, the design of these four symbols must be correlated. This usually cannot be achieved by using some superficially similar mathematical symbols, as these are intended for other typographical context. Thus, the two missing characters are proposed here as new characters.

As usual for vertical lines, they follow the slant angle of the font, and while they are slanted when they occur in italics as it is usual for phonetic text, they have vertical reference glyphs.

Referring to the glyphs in italic fonts alone (as the use of such fonts is prevalent in phonetic text), these characters could have been proposed as DOTTED SOLIDUS and WIGGLY SOLIDUS as well.

However, the slant angle in all specimens follows that of the vertical strokes of the Latin letters. Moreover, fig. 2004a-184 (one of the rare examples showing phonetic text in a non-italic font) in fact shows true vertical lines (albeit only the already encoded ones of the set). Thus, the proposal follows this for the newly proposed vertical lines used in Lithuanian dialectology.

3. Proposed Characters

Block: Latin Extended-E (in the current Roadmap at U+AB30...U+AB8F)

The placement of the proposed letters in this block follows the guideline (proposed by Michael Everson in conjunction with the proposal N3907) that new case pairs continue to go into the Latin Extended-D block, while unpaired lowercase letters go into this block. The letters are placed in the last column of that block, to avoid conflicts with other proposals.

Additions for Lithuanian dialectology

ċ	U+AB80	LATIN SMALL LETTER C WITH PALATAL HOOK (see fig. 1930a-XVIII, 1930a-6, 2001a-344a)
ĥ	U+AB81	LATIN SMALL LETTER H WITH PALATAL HOOK → A727 latin small letter heng (see fig. 2001a-344a)
ṁ	U+AB82	LATIN SMALL LETTER M WITH INWARDS HOOK (see fig. 2001a-344a/b)
ṇ	U+AB83	LATIN SMALL LETTER N WITH INWARDS HOOK (see fig. 1930a-XIXa/b [with explanation], 1930a-26b, 2001a-344a/b)

Block: Phonetic Extensions Supplement-B (in the current Roadmap at U+AB90...ABAF)

This block is intended for phonetic characters which are not Latin by nature, and therefore are not appropriate to be included in the Latin Extended-E block.

Intonation marks for Lithuanian dialectology

↗	U+AB90	MODIFIER LETTER SLANTED UP ARROW = sharp rise in tone (see fig. 2001a-347)
↘	U+AB91	MODIFIER LETTER SLANTED DOWN ARROW = sharp fall in tone (see fig. 2001a-347)
↗̂	U+AB92	MODIFIER LETTER SLANTED UP ARROW ENDING IN BEND = increasing tone with falling trend at the end (see fig. 2001a-347)
↘̂	U+AB93	MODIFIER LETTER SLANTED DOWN ARROW STARTING WITH BEND = sharp rise and fall in tone (see fig. 2001a-347)

↑	U+AB94	MODIFIER LETTER SMALL MIDDLE SLANTED UP ARROW = slight rise in tone (see fig. 2001a-347)
↓	U+AB95	MODIFIER LETTER SMALL MIDDLE SLANTED DOWN ARROW = slight fall in tone (when at the end of a word) = overall fall in tone (when at the beginning of a phrase) (see fig. 2001a-347)
↗	U+AB96	MODIFIER LETTER SLANTED UP ARROW STARTING WITH HORIZONTAL LINE = continued rise in tone (see fig. 2001a-347)
↘	U+AB97	MODIFIER LETTER SLANTED DOWN ARROW STARTING WITH HORIZONTAL LINE = continued fall in tone (see fig. 2001a-347)
↙	U+AB98	MODIFIER LETTER SLANTED LINE WITH NORTH EAST ARROW FROM THE LOWER END = sharp fall in tone with rising trend at the end (see fig. 2001a-347)
↗	U+AB99	MODIFIER LETTER SHORT SLANTED LINE WITH NORTH EAST ARROW FROM THE LOWER END = slight fall in tone with rising trend at the end (see fig. 2001a-347)
Ṭ	U+AB9A	MODIFIER LETTER SMALL HARD SIGN ≈ <sup> 044A (see fig. 2001a-342 [with explanation], 2001a-344, 2004a-184)
Ṽ	U+AB9B	MODIFIER LETTER SMALL SOFT SIGN ≈ <sup> 044C (see fig. 2001a-341 [with explanation], 2004a-184)

Block: Supplemental punctuation

Additions for Lithuanian dialectology

⋮	U+2E4E	DOTTED VERTICAL LINE → 205E vertical four dots → 250A box drawings light quadruple dash vertical → 2999 dotted fence (see fig. 2001-348 ff., see also fig. 2004a-184)
⋈	U+2E4F	WIGGLY VERTICAL LINE → 2307 wavy line → 299A vertical zigzag line (see fig. 2001-348 ff., see also fig. 2004a-184)

Properties:

2E4E;DOTTED VERTICAL LINE;Po;0;ON;;;;;N;;;;;
2E4F;WIGGLY VERTICAL LINE;Po;0;ON;;;;;N;;;;;
AB80;LATIN SMALL LETTER C WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
AB81;LATIN SMALL LETTER H WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
AB82;LATIN SMALL LETTER M WITH INWARDS HOOK;Ll;0;L;;;;;N;;;;;
AB83;LATIN SMALL LETTER N WITH INWARDS HOOK;Ll;0;L;;;;;N;;;;;
AB90;MODIFIER LETTER SLANTED UP ARROW;Lm;0;ON;;;;;N;;;;;
AB91;MODIFIER LETTER SLANTED DOWN ARROW;Lm;0;ON;;;;;N;;;;;
AB92;MODIFIER LETTER SLANTED UP ARROW ENDING IN BEND;Lm;0;ON;;;;;N;;;;;
AB93;MODIFIER LETTER SLANTED DOWN ARROW STARTING WITH BEND;Lm;0;ON;;;;;N;;;;;
AB94;MODIFIER LETTER SMALL MIDDLE SLANTED UP ARROW;Lm;0;ON;;;;;N;;;;;
AB95;MODIFIER LETTER SMALL MIDDLE SLANTED DOWN ARROW;Lm;0;ON;;;;;N;;;;;
AB96;MODIFIER LETTER SLANTED UP ARROW STARTING WITH HORIZONTAL LINE
;Lm;0;ON;;;;;N;;;;;
AB97;MODIFIER LETTER SLANTED DOWN ARROW STARTING WITH HORIZONTAL LINE
;Lm;0;ON;;;;;N;;;;;
AB98;MODIFIER LETTER SLANTED LINE WITH NORTH EAST ARROW FROM THE LOWER END
;Lm;0;ON;;;;;N;;;;;
AB99;MODIFIER LETTER SHORT SLANTED LINE WITH NORTH EAST ARROW FROM THE
LOWER END;Lm;0;ON;;;;;N;;;;;END
AB9A;MODIFIER LETTER SMALL HARD SIGN;Lm;0;L;<super> 044A;;;;;N;;;;;
AB9B;MODIFIER LETTER SMALL SOFT SIGN;Lm;0;L;<super> 044C;;;;;N;;;;;

Linebreaking properties of punctuation marks:

The proposed punctuation marks are vertical lines by nature, and therefore behave in any linebreaking and related processing like U+2016 DOUBLE VERTICAL LINE.

Notes on confusables:

The letter U+AB82 LATIN SMALL LETTER M WITH INWARDS HOOK is similar to U+006D LATIN SMALL LETTER M.

Likewise, the letter U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK is similar to U+006E LATIN SMALL LETTER N.

The intonation marks, while being modifier letters, are not intended to be allowed in IDNs or identifiers.

4. Acknowledgements

Special thanks for Michael Everson for providing a font containing all the characters proposed in this document.

5. References

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- [2004a] Fragmentas nuskaitytas iš: Lietuvių kalbos tarmių chrestomatija, 2004.
- [2006a] Kačiušienė G. Šiaurės panevėžiškių tarmės fonologijos bruožai. Vilniaus universiteto leidykla, 2006.
- [2008a] Girdenis A. Žemaičių dzūkai: Tekstai su komentarais. Mokslo ir enciklopedijų leidybos institutas, 2008.

6. Examples and Figures

The figures are numbered by the referenced work (consisting of the year of edition and the letter, as in the "references" list, followed by a hyphen the page number, and following by a second letter if more than one figure is taken from a page.
E.g.: "Fig. 2001a-344" means "See ref. [2001a], p.344").

Fig. 1930a-XVIII: *Showing specimens for U+AB80 LATIN SMALL LETTER C WITH PALATAL HOOK.*

[g] = stark stimmhaftes, unaspiriertes *g*, gemeinlit.: schriftlit.
gá·udo· = *gáudo* .
[ç] = palatales, stimmhaftes *g*, gemeinlit.: *çí·βus* = *gývus* .

Partial translation from German:

[g] = strongly voiced, unaspirated *g*, ...

[ç] = palatal voiced *g*, ...

Fig. 1930a-XIXa: Showing specimens for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK in an use contrastive to the already encoded U+014B LATIN SMALL LETTER ENG.

[*n*] = dentales, stark stimmhaftes *n*, gemeinlit.: schriftlit. *nuõ*.
 [*ŋ*] = palatales *n*, gemeinlit.: schriftlit. *suñ.ķei* = *suñkiai*.
 [*ɲ*] = velares *n*, gemeinlit.: schriftlit. *meñ.ko* = *meñko*.
 [*ɳ*] = silbisches *n*, sehr selten: R 5 *łukúosɳ* < *laukúosna*.

Annotated translation from German:

[*n*] = dental, strongly voiced *n*, as in literary Lithuanian *nuõ*.
Dantinis, stipriai skardus n, kaip bendrinės lietuvių kalbos žodyje nuõ.
 [*ŋ*] = palatal *n*, as in literary Lithuanian [phonetically transcribed] *suñ.ķei* = [standard orthography] *suñkiai*.
Palatalinis (minkštas gomurinis) n, kaip bendrinės lietuvių kalbos žodyje suñ ķei = suñkiai.
 [*ɲ*] = velar *n*, as in literary Lithuanian [phonetically transcribed] *meñ.ko* = [in the standard orthography] *meñko*.
Veliarinis (kietas gomurinis) n, kaip bendrinės lietuvių kalbos žodyje meñ.ko = meñko.
 [*ɳ*] = syllabic *n*, very rare, as in the dialect [conventionally marked R5 in the Gerullis' book] *łukúosɳ*, corresponding to the standard Lithuanian *laukúosna*.
Skiemeninis n, labai retas, kaip tarmės, Gerulio knygoje sutartinai žymimos R5, žodyje łukúosɳ < laukúosna.

Fig. 1930a-XIXb: Enlarged part of 1930a-XIXa, to show the exact form of U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK.

[*ɲ*]

Fig. 1930a-6: Showing specimens for U+AB80 LATIN SMALL LETTER C WITH PALATAL HOOK (red).

<i>Zuĩkis iĩ ežĩs.</i>	<i>zuiķĩ·s iĩ. ežĩ·s</i>
<i>Dailũs, gražũs zuĩkẽlis sãko</i>	<i>daitũs gražũs zuiķẽ·lis sã·ko</i>
<i>ẽžĩui:</i>	<i>ẽ·žĩui</i>
<i>– Kokiẽ, broliũkai, tãvo</i>	<i>kó·ķi bro·lũkai tã·bo rū·bai</i>
<i>rũbai dỹgũs iĩ negrãžũs.</i>	<i>đĩ·gu·s iĩ. negrã·žu·s</i>
<i>– Tiesà, – atsãkẽ ežỹs, –</i>	<i>tiesà atsã·ķẽ ežĩ·s bẽt mãno·</i>
<i>bẽt mãno ãdatos *ãpgina manẽ</i>	<i>ã·dato·s ã·ķĩna mañẽ nuõ šu·</i>
<i>nuo šuniẽs iĩ viĩko dantũ. Aĩ</i>	<i>niẽs iĩ. ßĩ·ko dantũ·</i>
<i>tãm tãvo gražũs kailẽlis? Zuĩ-</i>	<i>aĩ. tá·m tã·bo gražũs kailẽ·lis</i>
<i>kẽlis niẽko nebeatsãkẽ, tik suñ-</i>	<i>zuiķẽ·lis niẽko nebeatsã·ķẽ</i>
<i>kiai atsidũso.</i>	<i>ĩĩk· suñ.ķei atsidũso·</i>

Fig. 1930a-26a: Compare with fig. 2001a-349 which shows the same text.

tuř.gui meřgã·ta atsilĩ.ka nù mó·linas
ji (auch jĩñ) tã·ksta jeřkó·dama sãba mamĩ·tes
žmó·nis ktã·uš
kó·lę bũ·ba tãba mã·ma
meřgi·te veřgdam,ã sã·ka
ař jũ·s neži·nõi mãna mã·ma aŗdri.sk"s tarbã·lõm apřikabi·-
nus ãle ùž viřas geřã·sne

Fig. 1930a-26b: Showing a specimen for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK.

kuř feišĩ·be
tuřẽ·dams pũksĩã·lis mã·di pamã·te aňt žã·mes grudã·li iř
mĩřlije sã·u
iň.sũ iř sulẽšũ
atřĩ.tuřẽ pũksĩã·lis pĩi grũ·da iř paklũ·ba i. spã·stus
kuõđ.ẽl ãř tũř,ũ (auch tũřũ) pražũ·i groũ.džei sućipřẽ·je
pũksĩã·lis vãnag,ãĩ gã·uda ģi·pus pũksĩẽlis iř tai ģiem ģiẽkai
õ. ãř tũřũ ðel viena meñ.ka grudã·le pražũ·i

Fig. 1930a-65: Showing a specimen for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK (red) in an use contrastive to the already encoded U+014B LATIN SMALL LETTER ENG (green).

mas. Tuõkart iř grãbo atsi- prã·ta ģĩ.les ģiõks eř patĩ·tõm
stõjẽs vřras iř pĩẽ visũ iřbegẽ- šnebzđẽ·ĵõms tuõk,ař·t eř grã·ba
dĩņes sãvo tiņģĩņẽ žmõņã. Ař atseřtõ·jeř řĩ·rs eř pĩẽ řõsu
ģi pasitaĩsiusĩ, ař nẽ, ãř neži- ežbecẽ·deņẽs sã·ba teņ·ģeņe
naũ. Tĩk mãt, kaiř pasãuly žmõ·ņõ ař ģĩ· pasẽtai·ř·ř ař
atsitiňka. ñẽ ãř ñežžõņõ iřk mãt kaiřp
Elžbietã Bũtẽnienẽ. pasã·ul⁽ⁱ⁾ atseřtõ·k
alžbiẽl bõlẽ·neņẽ

Fig. 1930a-88: Another specimen for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK (red) in an use contrastive to the already encoded U+014B LATIN SMALL LETTER ENG (green).

řeži.mu. řisõ·ķũ. řãģĩ.mũ iř
ķitũ· řãĩkalĩņẽ·řũ. ðãĩktũ·
iřķelã.řĩ.s beřãžũodamas pař-
tiñ.ku.s ũ·bagũ. ũ·bagas pa-
mã·ti.s iřĩķĩ.sũsũ. iř řeži.mã.
plãđẽ.łũ. ðũonã.s prãđẽ·ģĩ.s
prařĩ·i kãđ iř ģã·m pĩimestũ·

Fig. 2001a-341: Showing specimens for U+AB9B MODIFIER LETTER SMALL SOFT SIGN, some enclosed in the (already encoded) superscript parentheses U+207C/U+207D.

ɸ = labai redukuotas bespalvis priešakinis balsis; vartotinas tik tada, kai tikslesnės balsio spalvos neįmanoma nustatyti. Pvz.: š. pan. àk^(b)š ~ akis, žàl^(b)š ~ žaliūs, -iàs;

Translation from Lithuanian:

ɸ = substantially weakened colourless front vowel; this character is to be used only when more precise vowel colouring is impossible to determine. For example, as in North Panevėžys dialect àk^(b)š = literary Lithuanian *akis*, etc.

Fig. 2001a-342: Showing specimens for U+AB9A MODIFIER LETTER SMALL HARD SIGN (green), some enclosed in the superscript parentheses U+207C/U+207D.

ɸ = labai redukuotas bespalvis užpakalinis balsis; vartotinas tik tada, kai tikslesnės balsio spalvos neįmanoma nustatyti. Pvz.: š. pan. ràg^(b)š ~ ragūs, vāĩk^(b)š ~ vaikas, vāĩk^(b)š ~ vaikūs.

Translation from Lithuanian:

ɸ = substantially weakened colourless back vowel; this character is to be used only when more precise vowel colouring is impossible to determine. For example, as in North Panevėžys dialect ràg^(b)š = literary Lithuanian *ragūs*, etc.

Fig. 2001a-343: Showing specimens for U+AB9A MODIFIER LETTER SMALL HARD SIGN (red) and U+AB9B MODIFIER LETTER SMALL SOFT SIGN (green).

§ 6. Redukcija

Maža kiekybinė balsio redukcija žymima pakeltu mažesnio šrifto rašmeniu: ^a, ⁱ, ^u. Pvz.: š. žem. šâ·rk^as ~ šárkos, á·vⁱs ~ ávys, vî·r^u ~ výrų. Kai redukcija itin ryški (balsis nesudaro skiemens ir pan.) balsio rašmuo dar ir suskliaučiamas: ^(a), ⁽ⁱ⁾, ^(u). Pvz.: š. žem. an^a·pá·mēt^(e) vā·k^(a) ɔn·tā·k^(a) ~ ana („ji“) pāmetė vaiką an(t) tāko.

Redukcija, iš esmės keičianti balsio kokybę, žymima minėtais specialiais rašmenimis: α ɔ ɪ ɸ ʊ ɸ. Reikalui esant, jie gali būti pakeliami bei sumažinami (^α, ^ɔ, ^ɪ, ^ɸ, ^ʊ, ^ɸ) ir suskliaučiami (^(α), ^(ɔ), ^(ɪ), ^(ɸ), ^(ʊ), ^(ɸ)). Pvz.: š. pan. àk^(b)š ~ akis, ràg^(b)š ~ ragūs, vāĩš^(b) ~ vištà.

Fig. 2001a-344a: Showing specimens for:

U+AB80 LATIN SMALL LETTER C WITH PALATAL HOOK (red),
U+AB81 LATIN SMALL LETTER H WITH PALATAL HOOK (green),
U+AB82 LATIN SMALL LETTER M WITH INSIDE HOOK (blue),
U+AB83 LATIN SMALL LETTER N WITH INSIDE HOOK (purple),
U+AB9A MODIFIER LETTER SMALL HARD SIGN (orange).

§ 7. Priebalsių ženklai

p b β φ m w – abilūpiai. Pvz., bk βó·r̥xs || vó·r̥xs ~ vóras, φù·r̥i̯e || furi-
je ~ fūrija. Tariant β tarp lūpų būna plokščias plyšys, tariant w – apskritas.

f v m p b – lūpų dantiniai. Pvz.: bk ñm̥fa ~ ñimfa, ap̥vad̥x̥i̯. ~ apva-
daĩ, p̥f̥eñig̥xs ~ pf̥eñigas. Ženklu *v* dabar įprasta žymėti atitinkamą bk ir
tarmių garsą, nors dažniausiai jis yra abilūpis, – vadinasi, turėtų būti ra-
šomas β arba w.

j j̥ t̥ d̥ k̥ ɟ̥ ɭ̥ r̥ ŋ̥ x̥ h̥ – palataliniai. Pvz.: bk k̥eɲk̥é·jes ~ kenkėjas,
j̥ún̥g̥e· ~ br̥oɲx̥it̥as, kretingiškių j̥á·u̯i̯ ~ jáučių¹². Pokario metais vietoj *k̥ ɟ̥*
ŋ̥ ir kt. įprasta rašyti *k̥ g̥ ŋ̥*, beveik nebevartojami *j̥ t̥ d̥*.

ž s̥ c̥ ʒ̥ – retrofleksiniai („šlekiuojamieji“); tariami kiek atlenktu atgal
liežuvio galu. Pvz., senųjų žagariečių š̥eš̥ũ· ž̥o·ʒ̥ũ. ~ šešių ž̥o·d̥zių, š̥eñũk̥s ~
senũkas (girdėti lyg tarpiniai garsai tarp *š̥ / s̥, ž̥ / z̥, ʒ̥ / ʒ̥*)¹³.

l̥ m̥ n̥ r̥ – skiemeniniai. Pavartojami tik fakultatyviai, – pvz., š. pan.
àkl̥s̥ || àk̥at̥s̥ (kai kur àk̥ot̥s̥) ~ aklūs.

t̥ d̥ s̥ z̥ c̥ ʒ̥ n̥ l̥ – liežuvio priešakiniai dantiniai. Pvz.: bk žũ·k̥xs ~ dzũkas,
ʒ̥ingul̥ũk̥ai ~ dzinguliukai. Vietoj *ʒ̥ ʒ̥* dažniausiai rašomi digrafai *dz dž*, nors
jie ir nesiderina su *c̥ ė̃*.

t̥ d̥ š̥ ž̥ č̥ ʃ̥ l̥ r̥ ŋ̥ – liežuvio priešakiniai alveoliniai. Pvz.: tr̥àk̥t̥i ~ trakti,
d̥r̥ĩ·p̥so· ~ dr̥ybso, ž̥á·nr̥as ~ žánras, ž̥á·r̥ž̥g̥ina ~ džáržgina, ž̥ũ·g̥aũje ~ džiū-
gauja. Vietoj *ʒ̥ ʒ̥* labai dažnai rašomi digrafai *dž dž*, nesideriną su *č̥ ė̃*.

s̥ z̥ c̥ r̥ – retrofleksiniai. Pasitaiko tik kaip variantai ir todėl žymėtini
tiktaip epizodiškai, – pvz.: bk š̥r̥ũto·s̥ ~ sr̥ũtos, p̥ũ·z̥r̥as ~ pũzras.

ŋ̥ g̥ k̥ ɣ̥ (h̥) x̥ – liežuvio užpakaliniai. Pvz., bk tá·ng̥xs ~ langas. Vietoj *ɣ̥*
dabar įprasta rašyti *h̥*, nors iš tikrųjų tai ne liežuvio užpakalinio, o gérkli-
nio priebalsio ženklas. Įsidėmėtina, kad *x̥* nieku būdu negalima keisti di-
grafu *ch*, nors kartais taip ir daroma.

Partial translation from Lithuanian, augmented by an example for *h̥*:

f v m p b, labial-dental consonants. For example, as in literary Lithuanian [phonetically transcribed] ñm̥fa
= [standard orthography] ñimfa, etc.

... *ɟ̥* ... *h̥*, palatal consonants. For example, as in literary Lithuanian [phonetically transcribed] j̥ún̥g̥e· =
[standard orthography] j̥ũng̥é, h̥j̥m̥nas = h̥imnas.

ŋ̥ g̥ k̥ ɣ̥ (h̥) x̥, dorsal consonants. For example, as in literary Lithuanian tá·ng̥as = [standard orthography]
lángas.

Fig. 2001a-344b: Showing enlarged parts of fig. 2001a-344a, to show the exact shape of (the italic forms of) the letters U+AB82 LATIN SMALL LETTER M WITH INWARDS HOOK and U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK.

Fig. 2001a-347: Showing specimens for the intonation marks (U+AB90 ... U+AB99).
 In U+AB95 MODIFIER LETTER SMALL MIDDLE SLANTED DOWN ARROW (red), two applications are unified into one character.
 U+A71D MODIFIER LETTER RAISED EXCLAMATION MARK (green) is already encoded as Africanist tone mark.

§ 11. Intonacijos ir teksto sintagminės skaidos ženklai

Žymėtini tik tie svarbiausi sakinio intonacijos bruožai, kurie sutelkti centriniuose sintagmos ir frazės žodžiuose. Ženkla (jeigu specialiai nenurodyta) kitaip, žymimi po tų žodžių.

$\downarrow \backslash \searrow$ – ryškus tono kilimas (antikadencija), kritimas (kadencija), kilimas–kritimas (akcentuota kadencija). Pvz.: bk *pàpu·tē· žvarbùs vė·jes/ / i·r·ē·mē· krīšti bá·tto·(s) snā·gē·s\ // ~ Pàpūtė žvarbùs vėjas, ir ēmė krīsti báltos snaigės, *na·ir·grāžùmāz\·gi tu·mē·rē·nu·!* ~ Na, ir grāžumas gi tų merginų!*

\circ – nežymus tono kilimas ar kritimas. Pvz.: š. žem. *tas·ō·nī^(e) / mō·n^a brūol's / dēdē·lē· mī·līē^(e) tōn·mē·rē·tē·tk^(a) / uoñē·ī^(e) // ~ Tas Añtē („Antanas“), mūno („mano“) brólis, dīdeliai („labai“) mylėjo tą mergėlką Onėlę. Dažniausiai šie ženklai rodo ir greičesnę tarimo tempą.*

$\downarrow \searrow$ – tęsiamas tono kilimas ar kritimas. Pvz.: š. žem. *tēi·vā·kā·krūok / cī·p / mūoñi·n^(a) ēš·prūot^a / krā·u·stūos\ // ~ Tie vaikai kriōka („verkia“) cypa („cypia“), mótyna iš prōto krāustos!*

\downarrow – tono kilimas su kritimo tendencija intonuojamo segmento pabaigoje. Pvz.: š. žem. *pā·s(k^a) / kad·ūns·mē·rē^a / tīk·tā·přī·anūo / tarā·d^a // ~ Pās·ku („paskui“), kad anas mīrē, tiktaĩ pri anō („pas jį“) terādo. (Baigiant sakyti *mīrē* susvyruota, ar aiškinti toliau situaciją, ar ne.)*

$\downarrow \searrow$ – ryškus ir atitinkamai nežymus tono kritimas su kilimo tendencija segmento pabaigoje. Pvz.: bk *tu·vīška·l·jāu·pābxi·gēi?* ~ Tu vīšką jau pā·baigēi? (Ramus klausimas; emocingai klausiant ar perklausiant būtų *tu·vīška·l·jāu·pābxi·gēi?*).

\circ – staigus bendras sintagmos tono pakilimas (žymimas frazės ar sintagmos pradžioje). Pvz.: *'kōnēgā·kšītis / tas·nalē·p^a / ō·n·tuorūos! //* *ōns·vāžā·ū^(a) / ē·nuvāžā·ū^(a) //* ~ Kunigáikštis – tas nelīpo an(t) tvorōs! Anas vāžiāvo i(r) nuvāžiāvo. (Pakeltu tonu pabrėžiamas temos vardininkas.)

\searrow – bendras tono kritimas (žymimas frazės ar sintagmos pradžioje). Pvz.: *sāvo·mīnī·sē / mano·núomo·nē·s / nīēkxs nēktā·ušē / vīšīškxi su tīkāū. / su·bró·lēs\ //* ~ Sāvo mintysē (mano núomonės niēkas neklāusē) vīšīškai sutikaū su bróliais.

Partial translation from Lithuanian:

Only the most important sentence intonation characteristics are to be marked on paper, and only those which rest on the central words of a syntagm or a phrase. The characters (unless specifically indicated otherwise), are to be written *after* the words they pertain to.

/ \ \ – sharp rise of tone (anticadence), fall (cadence), rise-fall (emphatic anticadence). For example [Lithuanian sentences, phonetically transcribed]

ˊ ˋ – slight rise or fall of tone. For example [Lithuanian sentences, phonetically transcribed]. Usually these characters also denote a faster tempo of delivery.

ˊ \ – protracted tone rise or fall. For example...

ˊˊ – rise of tone with a tendency of falling at the end of the intoned segment. For example...

ˋˋ – strong or accordingly slight fall of tone with a tendency of rising towards the end of the segment. For example...

ˊ – sudden general rise of tone of a syntagm (written at the start of the phrase or syntagm). For example...

ˋ – general fall of tone (written at the start of a phrase or syntagm). For example...

Fig. 2001a-348: Showing specimens for U+2E4E DOTTED VERTICAL LINE (red) and U+2E4F WIGGLY VERTICAL LINE (green).

// – frazės pabaigos (terminalinė) pauzė (žr. ankstesnius pavyzdžius).

/ – sintagmos ribų pauzė (žr. ankstesnius pavyzdžius).

— – ilga neterminalinė pauzė. Pvz.: bk *ir̃_tėˊṽas/ | ir_móˊtina/ |*
ir_bróˊleiˊ — *vĩšiˊ k̃aib_ž̃vėˊr̃iˊs\ púola ta_bė̃r̃ñõˊkaˊ // ~* Ir tėvas, ir mótina, ir bróliai – visi kaip žvērys púola tą berniõką.

⋮ – neryški pauzė sintagmos viduje (žr. ankstesnius pavyzdžius).

⋮ – netikėtas kalbėjimo srauto pertrūkis arba staigus intonacijos posūkis. Pvz.: š. žem. *er_õñs_l̃õˊbˊ s̃q.m̃d̃iˊs/ | p̃õˊp̃eˊŋk̃ĩs/ k̃êˊi(k)ˊ g̃a.us*
tõn_d̃eˊinˊ(a) da.r̃b̃ẽñiˊnku\ // ~ Ir anas liúoba samdýs („jis samdydavo“) po penkis... kiek g̃aus tą diená darbiniñkų (pauzė prieš darbininkų – pridūrimo signalas).

- – atviroji sandūra. Ypač žymėtina balsių junginiuose, kurie be šio ženkle gali būti skaitomi kaip dvibalsiai. Pvz.: bk *pa-up̃iˊs ~* paupys, *su-ir̃ũt̃eˊ ~* suirútė.

-- – netikėtas kalbėjimo srauto pertrūkis žodžio viduryje. Pvz.: *ute-nĩškių š̃p̃jáˊ.ũd̃iˊ.dava.(s) | žma.g̃éˊl̃iˊs | k̃aib_r̃aib̃éˊ.davaˊ ñˊõˊ.k̃aib̃l̃ĩũ.k̃aˊ | ŋ-
nuk̃aib̃ĩ.ñ̃(t̃) tas_pu.g̃žl̃ĩõˊkas\ // ~* Spj̃audydavos žmog̃ėlys, kai reik̃ėdavo nuo kabliũko n... nukab̃int' tas pũgžliõkas¹⁷.

Partial translation from Lithuanian:

⋮ – slight pause in the middle of a syntagm.

⋮ – unexpected interruption in the flow of speech, or a sharp change of intonation. For example [Lithuanian sentences in the Samogitian dialect, phonetically transcribed]

Fig. 2001a-349: Compare with fig. 1930a-26a which shows the same text.

§ 12. Keletas pavyzdžių¹⁸

Bendrinė kalba

tuř.guĵe mēřgē.īē.¹⁹ | ačīlīko nu mō.īno.s\ || jī.lā.ksto | ĵieškó.da-
ma sávo mamī.īē.s\ || žmó.ñe.s\ | ktá.usē\ || kō.kē būwo\ tawo mamā? ||
mēřġī.īē | vėrgdamā sā.ko\ || ařġī jū.s | ñežīno.īē? || māno mamā ab-
dřīskušī | ĩerġē.īē mīs apšīkabīnušī | ġet.ūž vīsāž | ġerēšñē\ ||

Pietų žemaičiai raseiniškiai

tū.ř.guī mēřġē.īī | ačīlīka nu mūoī.nas\ || jī.lā.ksta | i.škuodama | sáwa
mamī.īē.s\ || žmūoīnīs | ktá.us\ || kuokā | būwa\ tawa māmā? || mēřġē.īī
řiegdamā | sá.kā\ || ařġī jū.s | ñežī.nuot? || mūna māmā abdřīskušī |
īerġīkūms apšīkabīnušī | aīē.ūž vīsās | ġerēšñē\ ||

Šiaurės žemaičiai telšiškiai

tō.řgō.u mēřgġē.īē | ačēlē.k^(a) nu mūoīn^a.s\ || an^(a).lā.kst^(a) | iškūodam^a |
sā.u^(a) māmā řē.s\ || žmūoīnīs | ktā.us\ || kūokⁱ | bū.u^(a) tā.u^(a) māmā? ||
mēřġē.īē | řīuogdam^a | sá.k^(a) || ařġī jū.s | nažēnūot? || mō.n^a mām^(a),
abdrē.skus⁽ⁱ⁾ | ĩerġēlīems apšīkabē.nus⁽ⁱ⁾ | ġet.ūž vēsās | ġerēšñē\ ||

Rytų aukštaičiai uteniškiai

tuř.guī mēřġē.ta | aīlī.ka. na mō.čē.s\ || anā.tā.ksta | ĵieška.damā |
sā.βa. mā.tū.īē.s\ || žmó.ñe.s\ | ktá.usē\ || kō.kē bū.wa\ tā.βa. mō.mā? ||
mēřġō.īē | vėrgdamā | sá.kā\ || ařġī jū.s | ñežī.nā.t\ || mā.na. mō.mā |
abdřī.skus | ĩerġē.ta.m apskābī.nus | aīē.ūž vīsāž | ġerā.sna\ ||

Rytų aukštaičiai kupiškėnai

tuř.guī mēřġē.ta | aīlī.ko. nō mō.čō.s\ || jī.tō.ksto | ĵieško.damā | sā.βo.
mō.tū.tā.s\ || žmó.nā.s\ | ktā.usē\ || kō.kē bū.wa\ tā.βo. mō.mā? || mārgō.itā |
vārgdamā | sō.kā\ || ařġī jū.s | ñežī.nō.t\ || mō.nō. mō.mā | abdřī.skus |
tarbā.tā.m apskābī.nus | aīē.ūž vīsāž | ġerā.sna\ ||

¹⁸ Pasinaudota J. Gerulio (Gerullis, 1930, 11 tt.) antruoju lyginamuoju tekstu „Mama“. Širdingai dėkojame Daivai Atkočaitytei, Irenai Kruopienei, Regi-
nai Rinkauskienei, kurios padėjo mums patikslinti kai kurių tekstų transkripciją.

from p. 350:

Rytų aukštaičiai šiaurės panevėžiškiai

tō.ř.ġ^(b) mēřġā.īē | ačēlī.ka nō mō.īños\ || jōn.tā.ksta | jæškó.dam^(b) |
sā.va mōtū.īē.s\ || žmó.ñē.s\ | ktā.us^(b) || kōk^b bū.va\ tā.va mām^(b)? || mēřġī.īē
væř.gdam | sá.kā\ || ařġī jū.s | ñežī.nat? || mā.na mām^(b) | abdřī.sk^b |
īerġē.tēm apšēkabi.n^b | ġet.ōž vōs^(b) | ġerēšñē\ ||

Fig. 2004a-184: Showing specimens for U+AB9A MODIFIER LETTER SMALL HARD SIGN and U+AB9B MODIFIER LETTER SMALL SOFT SIGN in the left column.

Also, showing single and double vertical lines, being part of the set which is supplemented by the U+2E4E DOTTED VERTICAL LINE and the U+2E4F WIGGLY VERTICAL LINE proposed here. As this specimen is one of the rare examples where phonetic text is set in non-italic type, it shows that the representative glyphs of the vertical lines are in fact vertical rather than slanted (and their names have to be selected accordingly).


<p>53 (Steigvilių) punktas Pakruojis r., Lauksodžio apyl., Steigvilių k. Moteris, g. 1885 m.</p>	 <p>1966 m. įrašė A. Jonaitytė Transkribavo R. Bacevičiūtė Įrašas Nr. į 256 saugomas LKI fonotekoje</p>
<p>vadi.nas' jcu pi.n'õŋ'ge mǎ.ta ka dǎ.g' pi.n'õŋ'ge dǎ.g' pi.n'õŋ'ge tẽ_dǎ- ba tǎ(s)_senẽ.l's' un'_pẽ.č'õz' gũ.l' ǝ_tǎ senẽ.la sǎ.ka aĩ.k tẽ.vẽ mǎt_kur pi.- n'õŋ'ge dǎ.g' iškǎ.s' tuos_pi.n'õŋ'g's ǝ_ tǎ(s)_senẽ.l's' sǎ.ka aĩ.k tu mǝ.ji kǎd' diẽu's dúos tǎ(i)_iř' i_gri.č'õ. ǎtn'õš u_tẽ_lǎŋ'ge bú.dava ùstumẽm' su_tõ- k'õm lun'tǎ.lẽ.m i_tǎd' prǎ.stum' i_ š'viẽs' nõ tẽ_dǎba ǎ.n tõkẽ pũ.z'ber'nẽ iř'_jiẽ gẽr'.ž' jcu_vǎkǎr' ka_tie š'nǎ.k' teip vidõ.i su_tǎis pinẽŋges tẽ_jie nõ-</p>	<p>Vadinas, jau pinigai ('pinigai'), mǎ- to, ka ('kad') dẽga pinigai, dẽga pinigai. Tei dabǎ tas senẽlis an pẽciaus ('krosnies') gũli, o tǎ senẽlẽ sǎko: „Eĩk, tẽvai, mǎt kur pinigai dẽga, iškǎsi tuos pinigus“. O tas senẽlis sǎko: „Eĩk tu, mójĩ ('motin'), kǎdǎ Diẽvas dúos, tai iř' i_gričĩ atnẽš“. O te lan- gai búdavo užstumiami, su tokiõm lentẽ- lẽm, i tadǎ prǎstumi, i šviesũ. Nũ, tei dabǎ eĩna tokiẽ pũsberniai, iř' jiẽ giřdžia, jau va- karẽ, ka tie šnẽka teip vidũj su tais pinin- gais ('apie tuos pinigus'). Tei jiẽ nueĩna, kur</p>

Fig. 2006a-162: Showing specimens for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK and several other characters proposed here.

satdǎ.ineš\ jo.š iš'si.perk\ || ǝ_vĩrẽ | vĩr'si_tuos | sǝ_ežgẽr'õm\ ||
nõl_tẽ_wõt pasẽt.ĩ.k' | ta_mó.tõŋ' dǎuǵá.us^(e) | || pasẽt.ĩ.k' | mó.tõŋ' tẽ.v's |
sǝ_dúon' | su_vĩ.na.ĩ štiklũkẽs || pastǎ.te.ĩ | e_kǎsi netũr^(e) | tẽ_vĩ.na.ĩ | ǎtõs\ pastǎ-
ta. | d̃vẽ.ĩ šteklẽn^(e) | tẽ_júos | pasẽt.ĩ.k' || dúonõ.s | tuo(s)_su_drõsk' | ušpĩ.tĩ
uñĩ_lẽ.kštẽš | tõs_dúonõ(s) | suwǎ.tga. | túos | l̃žger^(e) | štiklõkẽs | nõ_e_vĩ.s¹⁹ ||
dagõu | jiẽm | jcu_nereĩgdawa. | jǎuniesẽm\ || te_vĩs | tõk's_jc | palẽ.ĩ.gvẽ.ĩõm's |
bú.dava. || iš_(i)ũ | nereĩkatǎ.uj^(e) || tẽk_iš_svõ.čõs | iš_svõ.tu. || jc | išsipĩr-
kl.ma.\\,ta. || pas_mõŋ' | mĩ.su. | krǎšĩ ||
dabař | tẽ_mǎ.s | gẽr'žǎem\ || ka_dabař | kad_vǎstũ.vẽš | bǎĩ.gẽš | d̃vĩ.lǎktõ
wǎ.tandõ²⁰ || tẽ_kõ | tẽ_tẽp_greĩt | iššẽškõrs\ || vakǎr' | ka_parvažũoĩ^(e) | bú-
dawa. | nǎtrõ.ĩ.k' | ta_d̃vĩ.lǎkt⁽³⁾ | atẽĩ.n' ||
[iš ryto] nõ_žǎ.dõn | tẽ_muzikõntẽ\ dǎuǵá.usẽ || tẽ_tieř | mǎ.ršs | griež^(e) |

Fig. 2008a-271: Showing specimens for U+AB83 LATIN SMALL LETTER N WITH INWARDS HOOK and several other characters proposed here.

*mę(s)† | žid⁽ⁱ⁾ę·ĩ^ē | tōkēi_raudūonā·(s)† žę.idèlê·s\ || pri_pà† | žė.m^ēs\ || ta_tēi_dagòkâ† | bō.ū | dēdēl^(ē)† | vā·istā·\! || ta_lô·b† | tũ·n† | idies | kât·šū·d^(ē)† | idies | ę_đdous-† | gē·rt^ē\ || rūožs† | ka_bū·s_kúok^ēs | kžn\ || ả.rbà† | túokĩ^ĩ† | dâ·r† | tũ·n_ 'túokũ⁽ⁿ⁾ | kiesalòku³¹²\ | bū·s-† | tuokę(s)_žuolė.l^ēs\ | šàknìkēs\ dous || surūou^ē\ || ta_túokǣ·s\ lô·b | ę_gĩ·dĩ·s^ē(s)\ || vō_tě·p† | nabō.ū\ túokũ·m ||
 xž³¹³\ | ženā·\! || tōukâ·rt† | nê·† | aš_ă.tmēn^(o)† | ne_niēk^(a)\ || tōu-
 kâ·rt_žēnā· | kètúoks† | bōu_gi.vènēms || dabā† | gi.vènēms ĭ·r | dēdlē·\
 / gērs-† || vō_tōukâ·rt† | bō.ū | sũ⁽ⁿ⁾kũs\ || jē·† | ka(s)_sě·rγ³¹⁴ | sě·rgā† | jē·† |
 nê·† | nē\ || juk_tōukâ·rt† | sākāu\ aš || ka_ĩrĩ·lėk^(a)† | áuγūo(m)³¹⁵_
 ,mē·s³¹⁶ | ę_šėšėl_tiktā· | tabō-om\ || àštó.un^(ē)† | tapaúg^uôm\ || jáu† |*

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS**

FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title: **Revised proposal to add characters used in Lithuanian dialectology to the UCS**
2. Requester's name: **Vladas Tumasonis; Karl Pentzlin**
3. Requester type (Member body/Liaison/Individual contribution): **Expert Contribution**
4. Submission date: **2011-04-30**
5. Requester's reference (if applicable): **Vilnius University; Faculty of Mathematics and Informatics**
6. Choose one of the following:

This is a complete proposal:	Yes
(or) More information will be provided later:	-----

B. Technical – General

1. Choose one of the following:

a. This proposal is for a new script (set of characters):	No
Proposed name of script: -----	
b. The proposal is for addition of character(s) to an existing block:	Partially
Name of the existing block: Latin Extended-E (new), Phonetic Ext. Supp. B (new), Supp. Punctuation	
2. Number of characters in proposal: **18**
3. Proposed category (select one from below - see section 2.2 of P&P document):

A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) -----	B.2-Specialized (large collection) -----
C-Major extinct -----	D-Attested extinct -----	E-Minor extinct -----
F-Archaic Hieroglyphic or Ideographic -----	G-Obscure or questionable usage symbols -----	
4. Is a repertoire including character names provided? **Yes**
 - a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? **Yes**
 - b. 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? **Michael Everson**
 - b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): -----
6. References:
 - a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? **Yes**
 - b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? **Yes**
7. Special encoding issues:

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)? **No**

8. Additional Information:

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. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see <http://www.unicode.org/Public/UNIDATA/UCD.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

¹ Form number: N3702-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	No
If YES explain	
2. 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
If YES, with whom?	One of the authors (V. T.) does itself belong to the scientific community
If YES, available relevant documents:	See text
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	Yes
Reference:	See text
4. The context of use for the proposed characters (type of use; common or rare)	Scientific
Reference:	See text
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference:	See text
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	Yes
If YES, is a rationale provided?	Yes
If YES, reference:	To keep in line with related characters
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?	No
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
11. Does the proposal include use of combining characters and/or use of composite sequences?	No
If YES, is a rationale for such use provided?	
If YES, reference:	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	No
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility character(s)?	No
If YES, is the equivalent corresponding unified ideographic character(s) identified?	
If YES, reference:	