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Universal Multiple-Octet Coded Character Set
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Title: Revised proposal for encoding the Rovas in the UCS

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Introduction

This document is based on an expert backed process – involving Unicode-computing specialists, **Rovas** (*r-o-v-a-sh*) researchers and representatives of the user community – that reflects the latest results of the archeology, linguistics, paleography and the contemporary technical needs as well. This document replaces **N4183** (v2: 12-01-11) and **N4227** (12-02-06). This document contains modifications in the character repertoire.

As for the optional spelling of the **Rovas** block and script name in English, the Hungarian National Body can except the **Rovash**, as its pronunciation is closer to that of the original Hungarian word *rovás*. According to the traditions of using the Hungarian word *rovás* in several languages (see *Table 3-1*) as loanword adjusted in spelling, further proper variations are expected as well, for example in French **rovache** (*le rovache* – masculine as a noun).

The most important Rovas orthography – that has never became extinct and currently is gaining large popularity – is the **Szekely-Hungarian Rovas** (in French: *rovache szekelyo-hongrois*). Another, earlier Rovas orthography is the **Carpathian Basin Rovas** (in French: *rovache du Bassin des Carpathes*), which became extinct in the $11^{th}/12^{th}$ century, and it was deciphered on the end of the 20^{th} century, only.

The main statements of this document concern the following topics:

- **Name of the code block**
- **The character set**
- **The close relation between the Szekely-Hungarian Rovas and the Carpathian Basin Rovas**

Moreover, there are several other Rovas relics under research not belonging to these two well-known Rovas orthographies. Consequently, in this proposal only the following sub-blocks of the **Rovas block** are proposed to encode, leaving open the possibility to add other Rovas orthographies later:

- **Rovas punctuation marks**
- **Rovas numerals**
- **Szekely-Hungarian Rovas letters**
- **Carpathian Basin Rovas letters**

According to the state-of-the-art of the Rovas paleography, the characters set in this proposal will be stable, which is suitable for presenting both the already known and the anticipated Rovas relics.

The document contains the proposal summary form as well. Please, send any response to this proposal to Tamás Rumi (email: rovasinfo@gmail.com), Editor-in-Chief, Rovas Info News Portal or László Sípos (email: rovasfoundation@gmail.com), President of the Rovas Foundation.

Contents

1. About the authors

In the MSZT/MB-819 “Informatics” National Standardization Technical Committee of the Hungarian Standards Institution the consensus about encoding the Rovas script existed from 2008 to 2012 ended in 2012. As a consequence, the Hungarian NB has not any representative in the ISO/IEC JTC 1/SC 2 and in the ISO/IEC JTC 1/ SC 2/ WG2.

In the last ballot in the MSZT/MB-819 “Informatics” National Standardization Technical Committee, 55% of the votes were “**No**” to the current “Old Hungarian” code block in the recent ISO/IEC 10646: 2012/PDAM 2.2; 33% of the votes were “**Yes with comments**”, and there was not any vote “**Yes**” without comment. Therefore, despite of the strong majority opinion, there was no consensus, and as a consequence, the Hungarian NB was able to vote only “**Abstention**”.

In this situation, the authors of this contribution are responsible for supporting the appropriate encoding of the Rovas script with the existing tools. That is why the authors submitted the present proposal. The affiliation and the background of the authors are the following:

- Mr. **Jenő Demeczky**, MSc in Electronic Engineering, BME, MA in general and applied linguistics, ELTE, IBM World Wide Translation Terminologist, IBM Hungarian Terminologist, IBM Translation Services Center Terminologist for Central and Eastern Europe, International Business Machines Corporation Hungary Ltd., representative in the MSZT/MB-819 “Informatics” National Standardization Technical Committee,
- Dr. **Gábor Hosszú**, Candidate of Sciences of the Hungarian Academy of Sciences, MSc in Law (Péter Pázmány Catholic University), Associate Professor in the Department of Electron Devices at the Budapest University of Technology and Economics, researcher in the field of computerized paleography, author of several Rovas-related books and conference papers, developer of the first Rovas fonts being available in the Internet from 1994, representative in the MSZT/MB-819 “Informatics” National Standardization Technical Committee,
- Mr. **Tamás Rumi**, MSc in Architecture, MBA, researcher in the field of computerized paleography, author of several Rovas-related computerized paleographical books and conference papers, Curator of the Rovas Foundation, editor-in-chief of the Rovas Info News Portal, the largest Rovas information center and the Rovaspedia, the comprehensive knowledge base of the Rovas and related orthographies, individual member of the Unicode, representative of Chamber of Hungarian Architects in the MSZT/MB-819 “Informatics” National Standardization Technical Committee,
- Mr. **László Sípos**, MSc in Architecture, MBA, researcher in the field of computerized paleography, author of several Rovas-related computerized paleographical books and conference papers, President of the Rovas Foundation – the most significant Rovas book and electronic publisher, representative in the MSZT/MB-819 “Informatics” National Standardization Technical Committee, and
- Dr. **Erzsébet Zelliger**, Candidate of Sciences of the Hungarian Academy of Sciences, Associate Professor in the Department of Hungarian Historical Linguistics, Sociolinguistics, and Dialectology at the Eötvös Loránd University.

2. The goal of the encoding

The Rovas script has several orthographies; the most important of them is the Szekely-Hungarian Rovas is a writing system of the Hungarians with increasing popularity. In the last decades, there has been extensive research on exploring their roots and history (Róna-Tas 1992; Vásáry 1974; Györffy & Harmatta 1996; Róna-Tas 1994). It has been proven, that the Szekely-Hungarian Rovas has been in continuous use throughout the history of Hungary (Hosszú 2012b). Presently, its usage is getting

extensive not only in the scientific word but in every field of the daily life: education, economy, publications, technology, etc.[1] The increasing use of the Rovas can be demonstrated by the large number of printed and online materials and the rapidly growing size of the user community, with more than 100 000 estimated active users (Barabási 2008).

The goal of encoding is supporting the representation of the Rovas characters in the paleographical, archeological, linguistic, historical, and the contemporary Rovas publications; moreover, enabling the digital communication of the Rovas users.

The user base of the Szekely-Hungarian Rovas is distributed in every country of Europe where Hungarian population exists and in the global Hungarian community as well. Currently, in every part of the Hungarian society – including state and local administration –, the number of Szekely-Hungarian Rovas users is dynamically increasing.

The large Rovas user community is heterogeneous but the unification efforts of the last years are gaining success. Hundreds of Szekely-Hungarian Rovas civic groups, societies and organizations exist in the worldwide Hungarian community; their role is essential in the contemporary Rovas usage and in the popularization of the Szekely-Hungarian Rovas. However, some user communities apply slightly differing Szekely-Hungarian Rovas alphabets generating real need for normalization within the Hungarian user community. Consequently, the professional normalization led by the Hungarian Standards Body is the proper way to reach a balanced, acceptable and scientifically backed result.

3. Scientific background

Name of the script

The ad-hoc report N4110 (2011-06-08)[2] recommended the use of the term "Old Hungarian" as the script name. However, the term "Old Hungarian" is unsuitable for the following reasons:

- The expression "Old Hungarian" is ambiguous, since this term is already used by Hungarian linguists for denoting the medieval version of the Hungarian Latin-based script, which is totally different from the Rovas script. For example, http://en.wikipedia.org/wiki/Funeral_Sermon_and_Prayer is written with Latin-based Old Hungarian script. Therefore, using the term "Old Hungarian" for the Rovas leads to serious collision.
- According to the latest results of the Hungarian paleography, the Szekely-Hungarian Rovas has been developed before the Old Hungarian linguistic period (896–1526, see E. Abaffy 2003b:301-351). Consequently, using the name "Old Hungarian script" for an earlier alphabet is misleading.

Moreover, there are several arguments for the term "Rovas", for example:

- Several Rovas alphabets belong to the Rovas script. Therefore, the term "Rovas" is a category name and in the Unified Character Set a block is proposed to name "Rovas". Note, that the close relation between the Carpathian Basin Rovas and the Szekely-Hungarian Rovas was proven by

[1] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA48
[2] http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4110.pdf

linguist and Turkologist Gyula Németh as early as in 1932 (Németh 1932a:65-85 & 129-139; Németh 1932b; Németh 1934; Vékony 1985:71-84).

- The term **Rovas** has a common use in the Hungarian language. Although the word "Rovas" is of Hungarian-origin, it became a loanword in numerous other languages and has been used for a long time in the international literature, thus it is more and more accepted in the English language. See some examples in *Table 3-1*.

Language	Local version of the word Rovas
Albanian	*rabush, labush*
Bulgarian	*Равош, равуш, ровуш, ръвош*
Czech	*rabuše*
Danish	*Rovás Skriften*
French	*rovache*
Polish	*rowasz*
Romanian	*răvaş, răbuş, răboj, ráboş rábaş*
Serbian, Croatian	*rovaš, ravaš, raboš, rabuš, r(e)vaš*
Serbian	*ровашко писмо*
Slovakian	*rováš*
Slovenian	*rováš, rováša*
Ukrainian	*ровaш*

Table 3-1: The word *Rovas* in several languages as loanword adjusted in spelling

Note, that the research into the field of the Rovas script is mainly published in Hungarian and only little information is available in English. Consequently, the English databases are outdated in most cases. Especially, the results of the last 2–3 decades are missing from western literature. The contributions of the Hungarian NB use and refer to the results of both international and Hungarian scholars.

Names of the characters

The proposed character names of N4110 and N4196 are incorrect, as these names are based on a few arbitrarily selected medieval relics representing an outdated state of the Rovas-related paleography of the early 20th century. That time, the Szekely-Hungarian Rovas relic of the Nikolsburg Alphabet (*Fig. 3-1*) was almost the only significant Rovas relic. Accordingly, in the early 20th century, only the static view of the Szekely-Hungarian Rovas script existed. However, after exploring several archaeological sites in the 20th–21st centuries, more and more Rovas relics of different ages and locations were found, switching to the dinamic view of the of Rovas scripts' history.

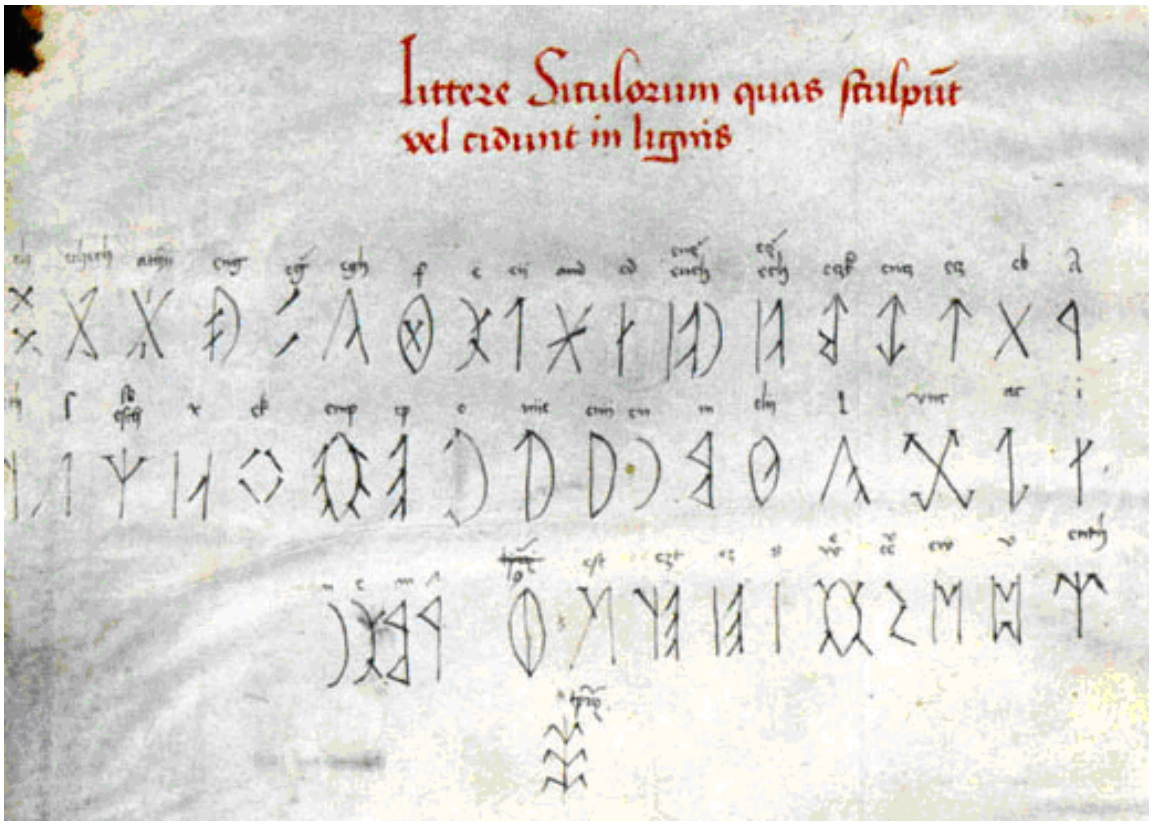

Figure 3-1: Alphabet of Nikolsburg (ca. 15th century; Forrai 1994; Németh 1934: 3)

In fact, the characters of the Rovas script have well accepted contemporary names both in scientific and popular literature. As the main reason for encoding the Szekely-Hungarian Rovas script is to serve the present-day use, the contemporary well-known character names of the letters have to be used in the standard.

Note, that N4110 and N4196 use the consonant names of the Nikolsburg Alphabet.[3] However, these consonant names **were never identical to the Hungarian letter-names; they do not conform to any Hungarian linguistic tradition, thus these consonant names are surely erroneous** (Zelliger 2010–2011). A few further Szekely-Hungarian Rovas alphabets, – related to the Nikolsburg Alphabet (Vékony 2004:60-108) – used the consonant names of the Nikolsburg Alphabet. However, the clear majority of the Szekely-Hungarian Rovas alphabets applied the usual Hungarian character names, including the most archaic one, the Ancient Relic of Franciscan friar J. Kájoni (*Fig. 3-2*). Consequently, **the character names proposed in the N4110 and N4196 are neither scientifically backed nor in practical use, therefore inappropriate for the encoding**.

[3] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA196

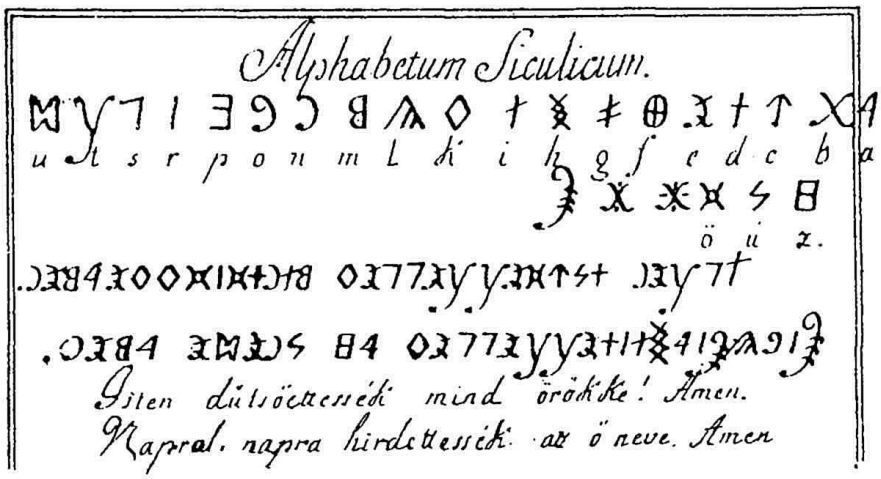

Figure 3-2: Ancient alphabet & sentences of Franciscan friar J. Kájoni, 1673 (Sebestyén 1909:245). The OE and UE characters are positioned at the end of the alphabet (apparently they are separated from the alphabet), and they are together.

Topological naming attributes

In this contribution, the coherent naming system of the Rovas characters follows the Unicode naming protocol: the letter names basically originated from one of the phonetic values of the character, and a topology-related attribute is used in the proposed letter name if necessary to differentiate from another Rovas characters. The applied attributes are the following: CIRCLE ENDED, CLOSE, DIAGONAL, OPEN, SHARP, and SIMPLE. In the UCS, there are several examples for similar terminology. In the following character names, the term OPEN and other attributes have not any phonetic implication.

```
16D5 RUNIC LETTER OPEN-P
16DB RUNIC LETTER DOTTED-L
16C0 RUNIC LETTER DOTTED-N
16D4 RUNIC LETTER DOTTED-P
02B4 MODIFIER LETTER SMALL TURNED R
02B6 MODIFIED LETTER SMALL CAPITAL INVERTED R
02FE MODIFIER LETTER OPEN SHELF
08F0 ARABIC OPEN FATHATAN
08F1 ARABIC OPEN DAMMATAN
08F2 ARABIC OPEN KASRATAN
0965 DEVANAGARI DOUBLE DANDA
10F9 GEORGIAN LETTER TURNED GAN
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The necessity of the Rovas Block

In the Hungarian and international paleography, several research efforts aimed to explore the various alphabets of the Rovas scripting. In the light of the latest archaeological finds, – in the last third of the 20th century –, it became clear that the Rovas inscriptions found in the Carpathian Basin (in central Europe) are strongly related. However, it became also clear that characteristic branches can be identified among them: the Szekely-Hungarian Rovas relics and the Carpathian Basin Rovas inscriptions are the majority. The fact that there are several common characters of the various Rovas alphabets highlights the clear necessity of the Rovas block in order to avoid multiple encoding.

Shapes of the glyphs

In the N4196 – and in the ISO/IEC 10646:2012/Amd.2: 2012 – the shapes of the characters show a primitive stage of the design process and there are serious problems in proportionality, shapeliness and typographic rules. This style is not in accordance with any tradition of the Rovas scripting. The Hungarian font designers can provide the necessary fonts for encoding the Rovas script for free.

4. Introduction to the Rovas orthography

4.1. Szekely-Hungarian Rovas

The Szekely-Hungarian Rovas probably gradually separated from the Carpathian Basin Rovas. The two Rovas orthographies are identical in several characters to date (e.g.: 𐲂 B, 𐲆 CS, 𐲗 LY, 𐲙 N, 𐲠 P, 𐲥 SZ), other characters are identical with smaller differences, see *Table 4.1-1*.

Szekely-Hungarian Rovas	Carpathian Basin Rovas
𐲀 A, 𐲁 AA	FORKED E
𐲉 E, 𐲋 EE	DIAGONAL E
𐲒 J, 𐲐 I, 𐲑 II	ANGLED I
𐲘 M	OPEN M
𐲛 O	OPEN O
𐲲 US	CLOSE S
𐲯 Z	OPEN Z

Table 4.1-1: Some examples for the Szekely-Hungarian Rovas and Carpathian Basin Rovas letters being close relative to each other (Hosszú 2012a).

Later, during the history, the Szekely-Hungarian Rovas was mostly preserved by the Szekely among the Hungarians. Around 1282, a Hungarian chronicler Simon Kézai mentioned first the Rovas script of the Szekelys. Later, from the 15^{th} century, the Hungarian intellectuals as well studied the Szekely-Hungarian Rovas orthography with increasing emphasis. In 1598, János Telegdi made the first textbook of the Rovas titled *Rudimenta priscae Hunnorum lingvae* ’Elements of the ancient language of the Huns’. In 1718, Mátyás Bél published the first printed scholar book about the Szekely-Hungarian Rovas orthography. From the 19^{th} century, the Szekely-Hungarian Rovas became more and more popular among the Hungarians, in general.

Today, the usage of the Szekely-Hungarian Rovas is becoming extensive in the everyday life. There are examples without number for the current applications of the Szekely-Hungarian Rovas of Rovas scripts in public places, books, journals and other contents, including both printed and electronic publications. For instance, in the Hungarian Electronic Library, there are more than 50 books written in the Szekely-Hungarian Rovas (Bilisics 2008; Bilisics 2007). Additionally, in Hungary, in Transylvania – especially Szekelyland (Romania) - and in other countries with significant Hungarian population, villages and towns use official city limit signs with Szekely-Hungarian Rovas.

The Szekely-Hungarian Rovas[4] uses both the right-to-left (RTL) and left-to-right (LTR) directions, but the former is the original and dominant direction. The glyphs in the code chart of this proposal are shown in right-to-left orientation. Furthermore, the boustrophedon (alternating line directions) is also possible, even if not frequently used (*Fig. 4.1-1*). In applying the boustrophedon, the text in alternate lines can be rotated 180 degrees or the characters can be mirrored. In both cases, the direction of the reading is alternating from right-to-left to left-to-right. In addition, vertical (top-down) direction is also sporadically used.

Figure 4.1-1: Part of the greeting card with boustrophedon direction (Sólyom 2009).

Because of the coexistence of Szekely-Hungarian Rovas and Latin-based Hungarian orthography (Old Hungarian texts), the casing appeared in the Szekely-Hungarian Rovas as early as in the 17th century. First, the glyphs of the upper case Szekely-Hungarian Rovas characters differed from the lower case ones only in size. Recently, for reading psychological and reading speed improvement reasons, lower case character sets are typographically slightly different from the upper case ones. Upper and lower case characters can be horizontally aligned onto the baseline or symmetrically to the horizontal centerline (*Fig. 4.1-2*).

[4] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA176

a) *b)*

Figure 4.1-2: Cover pages of the books *a)* “Eclipse of the Crescent Moon” (Rumi, Sípos, & Somfai 2009) and *b)* “Seven and Seven Hungarian Folk Tales” (Rumi, Sípos, & Somfai 2010)

All the Szekely-Hungarian Rovas characters, including letters, numerals, and punctuation marks can be RTL or LTR alternatively, however being mirrorable, all of them are proposed to encode only once, giving all the letters, numbers and punctuations a weak direction.

4.2. Carpathian Basin Rovas

The *Carpathian Basin Rovas* [5] script is an extinct writing system. According to the latest paleographical results, the individual development of the Carpathian Basin Rovas started when the Carpathian Basin was occupied by the Onogurs in the middle of the 7th century. Based on the archaeological findings, the use of the Carpathian Basin Rovas is proven in the 7th-11th centuries, however, there are some tracks of its survival up to the 12th century.[6] The clear majority of the historical texts on the relics are in Hungarian (Vékony 2002). The direction of Carpathian Basin Rovas is right-to-left.

[5] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA106
[6] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA34

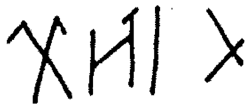

Figure 4.2-1: The inscription on the Silver Vessel of Ozora-Tótipuszta, last third of 7th century AD (Vékony 2004:192-196; Erdélyi & Ráduly 2010).

The transcription of XHI X is /10 sï̠ɣ̠^{a}t/, its translation from Onogur is '10 [pieces] fit [inside]'. It is noteworthy that in this proposal, the sound "*velar i*" in the Turkic inscriptions is represented by /ï/ and not /ɯ/, since the corresponding Turkic sound at that time has not yet been accurately determined (Vásáry 2010-2011). In the Hungarian inscriptions the "*velar i*" is represented by /ɯ/.

Figure 4.2-2: Two sides of the Rovas inscription of the Needle Case of Jánoshida from the last third of the 7th century (Erdélyi 1958a:39, *Table XLIV/2*; 1958b:55-56; 1961:279-280; Vékony 1987a:74, 76).

Written with Carpathian Basin Rovas font	Kárpát-medencei rovás betűkészlettel szedve	YϽ \ ᗷY IX
Written with normalized Carpathian Basin Rovas font without ligatures	Egységesített Kárpát-medencei betűkészlettel szedve összerovások nélkül	YYϽ \ ▯⁄ʔY IX
IPA phonetic transcription	Nemzetközi hangjelekkel történő átírás	/i̲ŋ̲ɛ \ b^{a}s ^{y}ŋ̲yr^{i}g̲/
Translation from Onogur	Fordítás onogurból	Needle, \ defeat Üngür!

A bone needle case near the town of Szarvas (Hungary) has a magical inscription from the second half of the 8th century (Vékony 1987a, 1987b; Zelliger 2010-2011). This belongs to the Late Avar Period (700-791, see Róna-Tas 1996:108). *Fig. 4.2-3* presents the drawing of the inscription made by I. Erdélyi historian-archaeologist in 1984. The edges of the bone needle case are worn; therefore the top and bottom edges of some characters are not clearly visible.

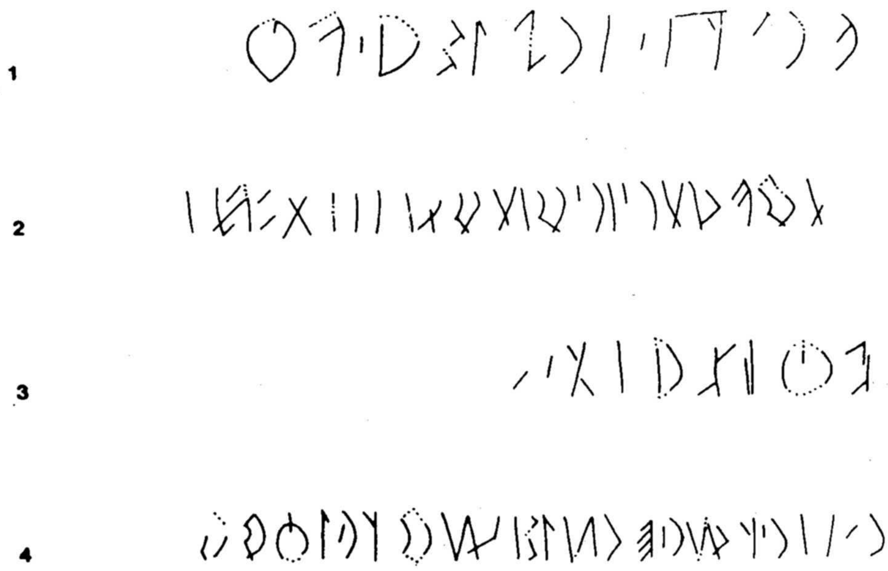

Figure 4.2-3: The bone Needle Case Rovas Inscription of Szarvas (Libisch 2004).

Written with normalized Carpathian Basin Rovas Font	Egységesített Kárpát-medencei rovás betűkészlettel szedve	[illegible]
IPA phonetic transcription	Nemzetközi hangjelekkel történő átírás	/yng^{y}r : ^{ˈ}sn^{ε}k im ^{ˈ}ʌ : β^{a}ʃ^{u} [t]^{i}ɣ t^{e}β^{ε}dɣ^{e}n : ^{i}s^{e}n : t^{i}ɣ t^{i}ɣ s^{u}r^{ɤ} b^{e}k$^{ɤ̈}$ β^{o}rɣ f^{ε}ʃ^{ε}s : ^{ε}l^{e}i̯ s^{з}l [...] ^{y}ng^{y}r n^{e} : adɣ^{o}n : [^{з}zdɣ] im^{e}sd ^{e}ɣt ɛn : iʃt^{ε}n^{ε}[m]/
Translation from Hungarian	Angol fordítás	‘Here is an iron [needle] against [the] demon Üngür; [The] needle should be pricked into the demon; needle, needle, stab, poke, sew! [Who] unstitches […]; Üngür shall not give [curse]; blast him, my God!’

The Golden Treasure of Nagyszentmiklós is a tableware collection of 23 gold pieces found in Nagyszentmiklós, Hungary (present-day Sânnicolau Mare, Romania) in the year 1799 (Németh 1932a; 1932b; Bálint 2004). One of them is presented in *Fig. 4.2-4*.

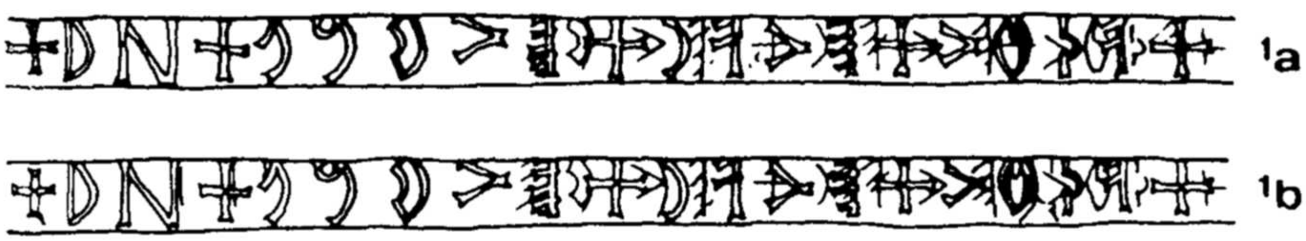

Figure 4.2-4: The inscription of the bowl No. 8 from the 9th-10th centuries (Hampel 1884:1-166, 1-2)

Written with normalized Carpathian Basin Rovas Font	+ DN + ʼ)ʘ>ǂ +)ᑫ>ǂ + >0ᚾᑫ +
IPA phonetic transcription	/βoʃᵘdᵘ ʷzˠdβᵃɲ ʷzᵃdᵃtni ᵉɣᵉi̯/
Translation from Hungarian	‘The fermented Woshudu [drink] for him to warm up.’
Translation to present-day Hungarian	Wosudu erjedvény felhevülésére az övé!

The beverage *woshudu* is known even nowadays mainly among the Turkic people as *boza*.[7] This word was internationally used and adopted by some languages. The > SHARP D /d/ in the term >0ᚾᑫ represented the regular diminutive suffix existing in the Ancient Hungarian linguistic period (Sárosi 2003:142). The punctuation symbol + WORD SEPARATOR VERTICAL CROSS may refer to Christianity. As A. Róna-Tas stated, the Hungarians had contacts with Christianity as early as the 5th century (Róna-Tas 1999).

Figure 4.2-5: The photograph of the quadrilingual No. 6 Jug and the inscriptions on its bottom from the 9th-10th centuries (László & Rácz 1977, *Image 69*; Németh 1932a:139)

The transcription of ꒱□l ᛟ l is /sïu̯-sʸrⁱm/, its translation is ‘filtered water/cleaned water’ from Onogur. The transcription of ǂᑫ is /βⁱzⁱ/; its meaning is ‘water’ in Hungarian. Between the two inscriptions there is a symbol that can be presented with ı WORD SEPARATOR VERTICAL BAR. The transcription of ᛟD>ᑫ is /vᵒdᵒjɔ̃/ ‘with water’ in Slavic. The fourth expression (ʼ)Y>) is in As or Alan language, its transcription is /dan⁽ᵘ⁾/ ‘water’.

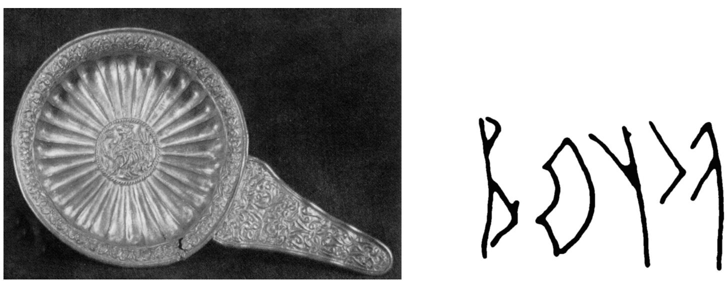

Figure 4.2-6: The photograph of the No. 15 flat-shallow ladle and its inscription from the 9th–10th centuries (László & Rácz 1977, *Image 80*; Hampel 1884, *Fig. 11*)

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[7] http://mek.niif.hu/02700/02790/html/92.html

Written with normalized Carpathian Basin Rovas Font	[illegible]
IPA phonetic transcription	/β^{a}d^{u} et^{e}ky/
Translation from Hungarian	‘forest food’ (=fruit)
Translation to present-day Hungarian	erdei étek (gyümölcs)

Figure 4.2-7: The inscriptions of the No. 5 jug from the 9th–10th centuries (Hampel 1884, *Fig. 13 & 14*)

The transcription of [illegible] is /qïm^{ï}s/, it is in Onogur (Vékony 2004:138, 149). The transcription of [illegible] is /ʃ^{a}β^{o}ɣ/; it is in Hungarian (Vékony 2004:138–139). The meaning of both inscriptions is ‘whey’.

Figure 4.2-8: A silver coin from 1996 with Carpathian Basin Rovas characters (Péter Molnár, numismatist). This example presents the reproduction of the historical Carpathian Basin Rovas characters in a present-day coin.

5. Technical properties

5.1. Punctuation marks

The contemporary Rovas applies the reversed versions of the usual European punctuation marks, and in case of the Szekely-Hungarian Rovas - their original versions as well due to its bidirectional property. For this reason, the following missing punctuation marks have to be encoded.

5.1.1. Szekely-Hungarian Rovas punctuation marks

Glyph	Name of the punctuation mark	Usage in texts
‘	REVERSED COMMA	RTL used as in the modern European scripts
‟	DOUBLE LOW-REVERSED-9 QUOTATION MARK	RTL as beginning quotation mark
⁘	WORD SEPARATOR CROSS	LTR and RTL, as word separator
⸗	DOUBLE COMMA-LIKE HYPHEN	RTL as historical hyphen
⁜	DOUBLE CROSS FULL STOP	LTR and RTL, as period
⸜	BEGINNING MARK RIGHT	RTL
⸝	BEGINNING MARK LEFT	LTR
⁝⁜	END OF MESSAGE MARK	LTR and RTL
⸋	WORD SEPARATOR VERTICAL CROSS	RTL

In case of some traditional Rovas punctuation marks, there is a rule that one graphemic unit is word-level punctuation mark (e.g. ⁘ WORD SEPARATOR CROSS), double graphemic unit is a sentence-level punctuation mark (⁜ DOUBLE CROSS FULL STOP), and finally the triple graphemic unit is a message-level punctuation mark (e.g. ⁝⁜ END OF MESSAGE MARK). Consequently, the ⸡ LEFT WIGGLY FENCE (U+29D8) and ⸢ RIGHT WIGGLY FENCE (U+29D9) are not appropriate to use instead of the ⸜ BEGINNING MARK RIGHT and the ⸝ BEGINNING MARK LEFT. Therefore, the individual encoding of the ⸜ BEGINNING MARK RIGHT and ⸝ BEGINNING MARK LEFT is justified.

The punctuation marks above seem to be generic enough to be included into the Supplemental Punctuation block.

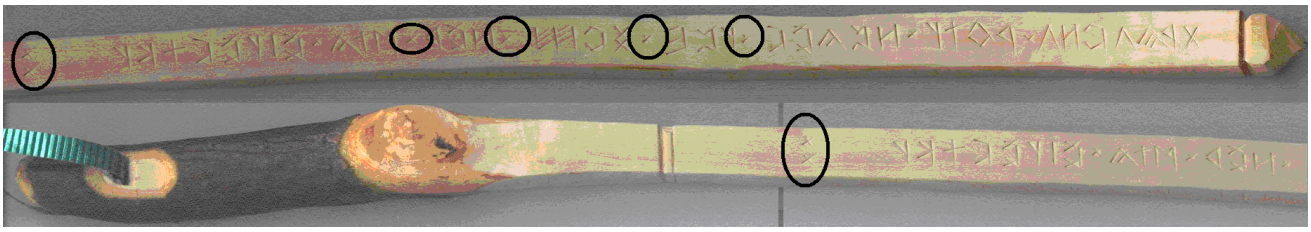

Figure 5.1.1-1: Two rows carved by Á. Zubrits in 2009. Note the consequent use of the ⁘ WORD SEPARATOR CROSS and the ⁜ DOUBLE CROSS FULL STOP. These are widely used in the Rovas carving orthography of the Hungarian scouts in Western countries (Zubrits 2009-2010).

5.1.2. Carpathian Basin Rovas punctuation marks

The Carpathian Basin Rovas uses only one punctuation mark cannot be found among the punctuation marks of the Szekely-Hungarian Rovas, since the WORD SEPARATOR VERTICAL CROSS punctuation mark is proposed for encoding in the Szekely-Hungarian Rovas already, since it was used in the both orthographies.

Glyph	Name of the punctuation mark	Usage in texts
┼	WORD SEPARATOR VERTICAL CROSS	RTL
ᛁ	WORD SEPARATOR VERTICAL BAR	RTL

The punctuation mark WORD SEPARATOR VERTICAL BAR seems to be generic enough to be included into the Supplemental Punctuation block.

5.2. Rovas diacritic mark

Accents are not used in the Rovas. Long vowels are different characters and long consonants are generally marked by duplication. However, there is the combining diacritic ◌̅ COMBINING MACRON-ACUTE (1DC4 in UCS) in a few Szekely-Hungarian Rovas relics, which indicates the duplication of a Rovas character if it is used in combination with that character *(Fig. 5.2-1)*.

Figure 5.2-1: Alphabet and examples of Verpeléti Kiss (1935 – found by F. Sólyom, Sólyom, 2009). It used individual Rovas characters for DZ and DZS, moreover ⸠ BEGINNING MARK LEFT and ⸡ END OF MESSAGE MARK. It also presents the ◌͡◌ COMBINING MACRON-ACUTE; see the Hungarian text: "*kettő- / ző jegy*" (meaning 'duplication mark') in the left bottom part of the picture.

5.3. Rovas numerals

5.3.1. Properties of the Rovas numerals

The Rovas numbering system is self-consistent and use distinct glyphs in series of 1 & 5 then 10 & 50, then 100 & 500, then 1000 (possibly later 5000 and 10 000). The Rovas numerals have only one version (there is no casing).

The Rovas digits have strong RTL properties. The Rovas numerical system differs from Roman digits in the following properties: the Rovas numbers have no subtractive parts, and there is an implicit multiplication that occurs when smaller digits occurs before another higher digit to the right, e.g. the meaning of the 𐳺𐳻 (two thousand) is two times one thousand.

For the DECIMAL SEPARATOR the ⸲ REVERSED COMMA can be used.

5.3.2. Proposed Rovas numerals

The Rovas numerals, which are proposed to encode are the followings:

𐳁 ONE, 𐳅 FIVE, 𐳇 TEN, 𐳋 FIFTY, 𐳍 ONE HUNDRED, 𐳑 FIVE HUNDRED, 𐳓 ONE THOUSAND

The existence of the Rovas numeral 𐳑 FIVE HUNDRED is attested in 1943 and then 1971 with slightly differing glyph, see *Fig. 5.3.2-1* and *Fig. 5.3.2-2*. Note that in the alternative proposal N4254, the 𐳑 FIVE HUNDRED is missing despite of its frequent use in the present-day Szekely-Hungarian Rovas printed orthography.

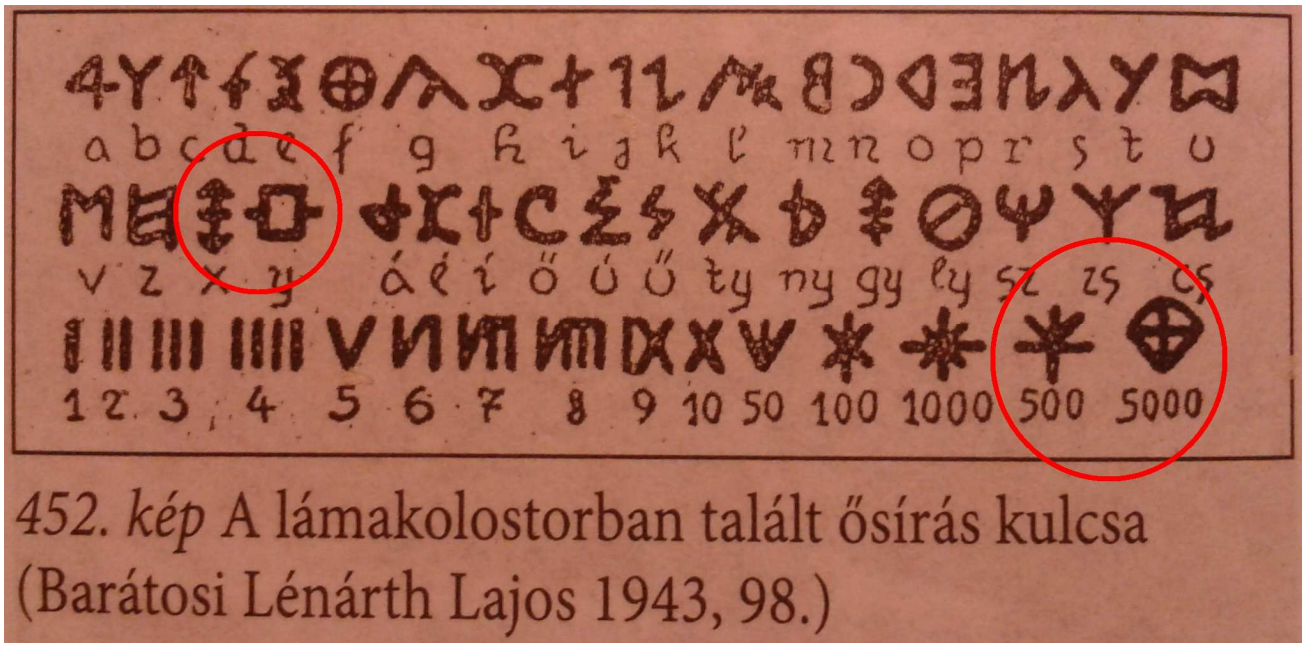

Figure 5.3.2-1: The alphabet of Lajos Barátosi Lénárth, 1943 (Mandics 2010: 386). He used Rovas characters for X, Y, FIVE HUNDRED and FIVE THOUSAND in his alphabet.

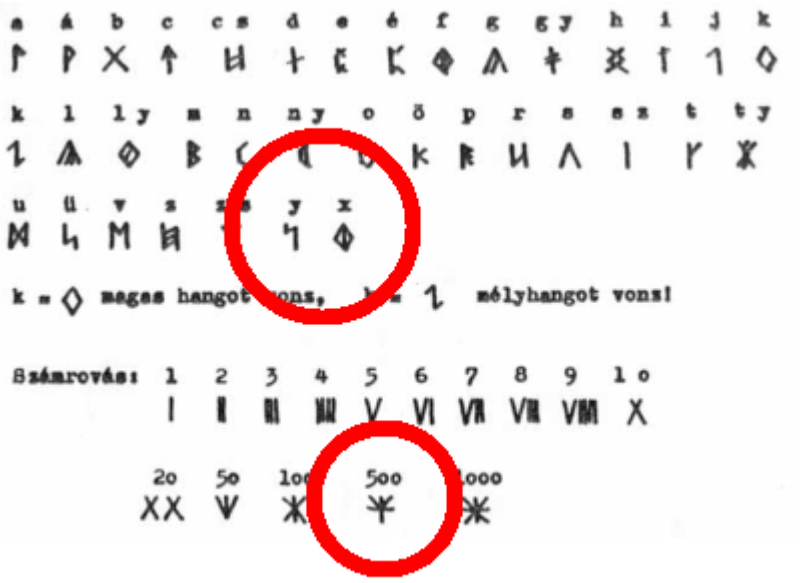

Figure 5.3.2-2: The alphabet of Z. Bárczy, 1971 (Bárczy 1971). He used Rovas characters for X, Y and FIVE HUNDRED in his textbook.

5.3.3. Postponed Rovas numerals

There is a demand for encoding individual Rovas numerals from 1 to 12 to represent the digits of the clock and the sequence numbers of months (see the expert contribution of Tamás Rumi, N4225). A specific property of the Rovas number representation is denoting the number FOUR with four vertical bars (𐳺) and not with a bar before the symbol of FIVE. Therefore, the encoding of the Rovas numerals 𐳁 ONE, 𐳂 TWO, 𐳃 THREE, and 𐳺 FOUR individually has the same reasons as the proposal has for encoding the Parthian and Pahlavi scripts (N3286R2, 2007-09-18) including the individual numbers 𐭡 ONE, 𐭢 TWO, 𐭣 THREE, and 𐭤 FOUR. This feature typical in the Middle-Iranian scripts and strengthening the supposition that the numerals of the Rovas script are related to those of the Parthian and Pahlavi scripts.

Moreover, there is a demand for encoding Rovas ZERO, higher Rovas numerals (especially FIVE THOUSAND and TEN THOUSANDS or TOMENY) and Rovas signs (PLUS, MINUS, PLUS-MINUS) as well.

Their use needs more evidence; therefore, this proposal recommends to postpone their encoding.

5.4. Rovas letters

In this proposal, several Rovas character name are composed of two elements, where the first element is an attribute, which reflects the topological features of the glyph and it has no linguistic relevance, and the second element represents one of the sound values of the character.

5.4.1. Szekely-Hungarian Rovas

Basic characters

𐳀 A, 𐳁 AA, 𐳂 B, 𐳄 C, 𐳆 CS, 𐳇 D, DZ, DZS, 𐳉 E, 𐳊 CLOSE E, 𐳋 EE, 𐳌 F, 𐳍 G, 𐳎 GY, 𐳏 H, 𐳐 I, 𐳑 II, 𐳒 J, 𐳓 K, 𐳔 OPEN K, 𐳖 L, 𐳗 LY, 𐳘 M, 𐳙 N, 𐳚 NY, 𐳛 O, 𐳜 OO, 𐳝 OE, 𐳟 OEE, 𐳠 P, Q, 𐳢 R, 𐳤 S, 𐳥 SZ, 𐳦 T, 𐳨 TY, 𐳪 U, 𐳫 UU, 𐳬 OPEN UE, 𐳮 OPEN UEE, CLOSE OE UE, CLOSE OEE UEE, 𐳰 V, W, X, Y, 𐳱 Z, 𐳲 ZS.

Basic characters are missing from the alternative proposal N4254 as follows: DZ, DZS, Q, W, X, and Y. These Rovas characters came to be between 1629 and the 1930's. Their glyphs were slightly modified ever since.

DZ

This character represent an individual phoneme of the Hungarian language: /d͡z/ *voiced alveolar affricate*. The occurrence of the Rovas character for DZ is attested as early as in 1935, see *Fig. 5.2-1*. Note, that DZ is not the same as D+Z.

DZS

This character represent an individual phoneme of the Hungarian language: /d͡ʒ/ *voiced postalveolar affricate*. The occurrence of the Rovas character for DZS is attested as early as in 1935, see *Fig. 5.2-1*. Note, that DZS is not the same as D+ZS.

Q

Its use is necessary for the representation and the assurance of the data loss-free transliteration of the mostly Latin – lately English - loanwords or proper names into Rovas, e.g. Aquincum: 𐳘𐳪𐳄𐳙𐳐𐳪 𐳀. The occurrence of the Rovas character for Q is attested as early as in 1629 *(Fig. 5.4.1-12)*. An example of its contemporary use is seen in *Fig. 5.4.1-1*.

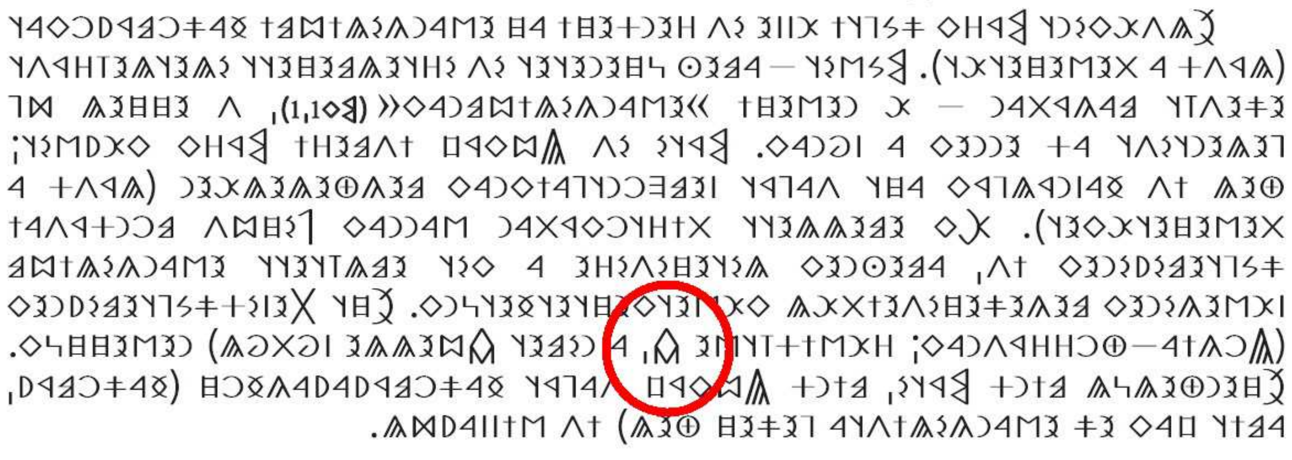

Figure 5.4.1-1: Page 9 of the New Testament transcribed to Szekely-Hungarian Rovas (2011).

W

Its use is necessary for the representation and the assurance of the data loss-free transliteration of the mostly historical family names, proper names and loanwords into Rovas. The occurrence of the Rovas character for W is attested in the 1930s (*Fig. 5.4.1-2*). Another example is presented in *Fig. 5.4.1-5*.

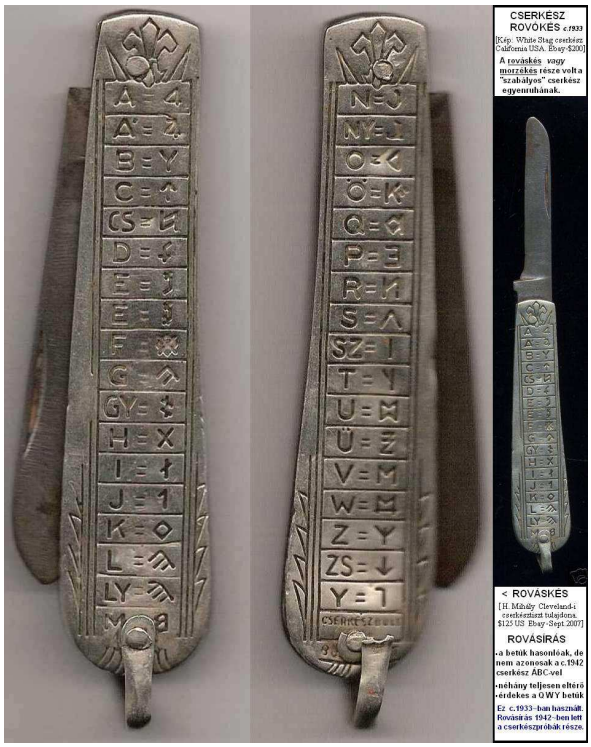

Figure 5.4.1-2: A carving knife used by Hungarian scouts from the 1930s (Horváth, M., ca. 1933, Zubrits, 2009, p. 310). It used individual Rovas characters for W and Y as well.

X

Its use is necessary for the representation and the assurance of the data loss-free transliteration of the mostly historical family names, proper names and loanwords into Rovas. The occurrence of the Rovas character for X is attested in 1629 (*Fig. 5.4.1-12*). Another relics, in which the Rovas character for X is used are the alphabet of L. Baráthosi Lénárth from 1943 (*Fig. 5.3.2-1*) and the alphabet of Z. Bárzy from 1971 (*Fig. 5.3.2-2*). Examples of its contemporary use are presented in *Fig. 5.4.1-3* and *Fig. 5.4.1-5*.

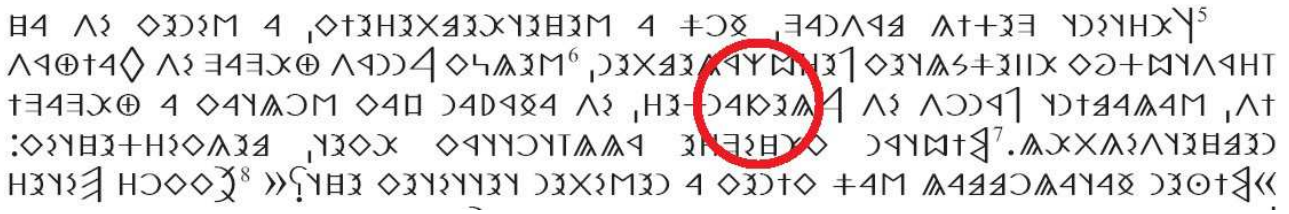

Figure 5.4.1-3: Page 183 of the New Testament transcribed to Szekely-Hungarian Rovas (2011).

Y

Its use is necessary for the representation and the assurance of the data loss-free transliteration of the mostly historical family names, proper names and loanwords into Rovas. The occurrence of the Rovas character for Y is attested as early as in 1629 (*Fig. 5.4.1-12*), later examples of occurrence are the alphabet of L. Baráthosi Lénárth from 1943 (*Fig. 5.3.2-1*) and the alphabet of Z. Bárzy from 1971 (*Fig. 5.3.2-2*). An example of its contemporary use is shown in *Fig. 5.4.1-4* and *Fig. 5.4.1-5*.

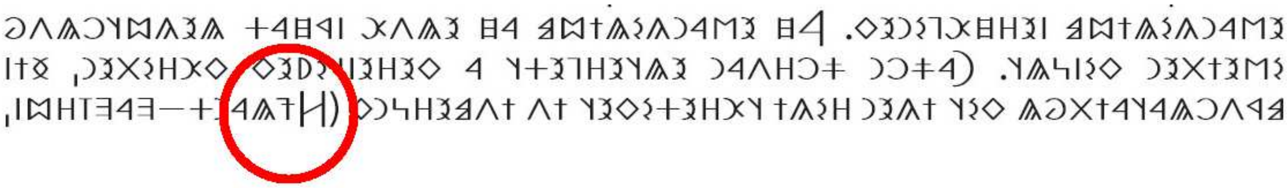

Figure 5.4.1-4: Page 138 of the New Testament transcribed to Szekely-Hungarian Rovas (2011).

Figure 5.4.1-5: Page 237 of the book of the Hungarian zip codes in the chapter "Budapest Street Names" (Faragó 2012).

Reptile-like symbols

AMB, AND, ANT, EMP, ENC, ENT, TPRUS, TPRU, MB, NAP, NB, UNK, US

The term *reptile-like* originated from J. Telegdi ("*reptilium formas*" in Latin), who wrote the first Rovas textbook in 1598 (Thelegdi 1598).[8] Their sound values differ from the original sound values of their compounds. They are historically used as syllables or individual words, and also applied in the present-day Szekely-Hungarian Rovas scripting (*Fig. 5.4.1-6*).

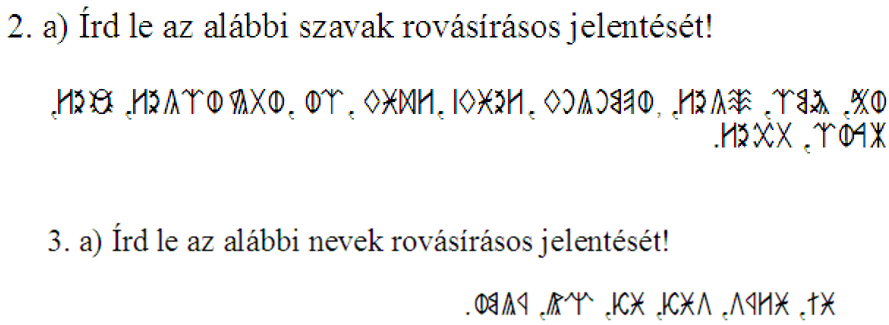

Figure 5.4.1-6: Reptile-like symbols in the manuscript of the Rovas Scripting Textbook of D. Puskás (Puskás 2009).

The present-day use of TPRUS and TPRU is related to their reconstructed original meaning, the period of time (Vékony 2004: 9): TPRUS may represent /eːv/ 'year' and TPRU represents /hoːnɒp/ 'month'. Therefore, they can be applied altogether with NAP /nɒp/ 'day' representing

8 http://books.google.hu/books?id=TyK8azCqC34C&pg=PA215

the elements of date in forms, e.g. ….. , ….. , ….. /year:….., month: ….., day: ….../ (*Fig. 5.4.1-7& 5.4.1-8*).

Bogárjelek eredete: Általában ismeretlen. A NAP , TRPU és TPRUS esetében azonban valószínűsíthető, hogy rovásnaptárban alkalmazták időtartam jelölésére. A NAP eredetileg valószínűleg az N , az O és a P betűk ligatúrája lehetett. Ha így van, akkor ez a magyar nyelv kora középkori nyelvállapotát rögzíti, később a "nap" szóban már "a" magánhangzót használtak, de a NAP bogárjel már nem változott. A TPRU és a TPRUS esetén a legújabb kutatások állapították meg, hogy a latin "*temporius*" szó rövidítése rejtőzik a nevükben és valószínűleg szintén rovásnaptárakban jelöltek időtartamot.

Bogárjelek alkalmazása: A bogárjelek többségét (kivéve: TPRU és TPRUS) betűösszevonásként alkalmazzuk, ilyen használatukra a középkori emlékeinkben is vannak példák. A NAP , TPRU és TPRUS bogárjeleket pedig időszakok megjelölésére használhatjuk, a NAP eredeti jelentése szerint "nap"-ot jelöl, a TPRU "hónap"-ot, a TPRUS "év"-et. A NAP , TPRU és a TPRUS ilyen alkalmazása legújabbkori javaslat (nem kötelező), melynek célja ezen bogárjelek alkalmazásának élővé tétele. A NAP bogárjel kétjelentésű, betűösszevonásként is és időtartamként is használható.

Figure 5.4.1-7: Using the reptile-like symbols NAP, TPRU, & TPRUS in journal *Rovat* (Gribek, 2009).

Figure 5.4.1-8: Bottom part of the Rovas calendar for 2012 and Rovas ABC educational panel (published in 2011) with the reptile-like symbols TPRU /hoːnɒp/ 'month' and TPRUS /eːv/ 'year' (Rumi & Sípos 2011).

Historical characters

DIAGONAL F, GH, CH, SHARP K, CIRCLE ENDED O, OPEN OE, SIMPLE R, SCH, OPEN V

It is necessary to encode the listed historical characters to be able to reproduce the historical relics (even the Nikolsburg Alphabet, see *Fig. 3-1*) and use these characters in historical and linguistic texts. Note, that these are not glyph variants of other characters, since their origins differ.

In the alternative proposal N4254, the majority of these historical characters are missing; therefore, the character repertoire of the N4254 cannot be used for representing the historical Szekely-Hungarian Rovas relics (e.g. in paleographical publications). The Rovas characters missing from the N4254 or existing with erroneous character names are the followings:

Ɵ DIAGONAL F

The Ɵ DIAGONAL F was probably borrowed from the Glagolitic Ⱚ FITA, which can be derived from the Greek θ THETA (*minuscule letter*, see Vékony 1986). The Ɵ DIAGONAL F has only historical significance (Vargyas relic, see *Fig. 5.4.1-9*). Oppositely, the unrelated 𐲪 F is used in the present-day Szekely-Hungarian Rovas orthography.

Figure 5.4.1-9: Inscription from Vargyas (present-day Vârghiș, Szekelyland, Romania), a stone carving from the second half of the 12th century (Benkő, E. 1996a:79). Its meaning: /ˈmeː fioɣ t^{e} $n^{ɛ}$kyd/ '[Woman,] here is your Son', its transcription: ꓬMOↃ ꓬ NꞮ1Ɵ Xꟻ (Vékony 2004:22; Zelliger 2010-2011). It is a citation from the *Gospel of John* (Ioh. 19, 26). In the inscription, ᒧ CIRCLE ENDED O /o/ shows an occasional, local influence of the Glagolitic Ⱁ ON /ɔ/.[9]

N GH

N GH /ɣ/ originated from the Parthian 𐭇 HETH /ɣ/x/h/, and it exists in the Carpathians Basin Rovas as well. In the Hungarian language, in the 11th century, at the end of the words, /ɣ/ was vocalized, and it became /u̯/ or /y̯/ (E. Abaffy 2003b, p. 302, p. 312). The /ɣ/ and its preceding vowel were pronounced as diphthongs : /ʊu̯/ and /ʊ̈y̯/. In the 12th-14th centuries, a monophthongization occurred: /ʊu̯/ and /ʊ̈y̯/ became /oː/uː/ and /øː/yː/, respectively (E. Abaffy 2003b, pp. 339-344). This process ended up to the 14th century (E. Abaffy 2003b, pp. 339-344). This linguistic process can also be detected in the development of the Szekely-Hungarian Rovas alphabet. Namely, the N GH /ɣ/ started to be used for representing /ø/øː/y/yː/, then the glyph variations of the N GH /ɣ/ appeared as well: the ᒥ OPEN UE and ⋜ OPEN OE, which became individual characters by now. It is noteworthy that before the 12th century, the sound /ø/øː/ did not exist in the Hungarian language. See also the discussion of the Vargyas relic (*Fig. 5.4.1-9*).

Ӿ CH

This character exists in the N4254; however, with erroneous name: ECH. The character-name "ECH" is in error, they do not comply with the Hungarian linguistic terminology (Demeczky 2012; Zelliger 2010-2012).

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[9] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA84

𐲔 SHARP K

The 𐲔 SHARP K is most probably a descendant of the Carpathian Basin Rovas ꞵ KUE. The 𐲔 SHARP K is unrelated to the Szekely-Hungarian Rovas 𐲓 K. An example for using it is presented in *Fig. 5.4.1-10*.

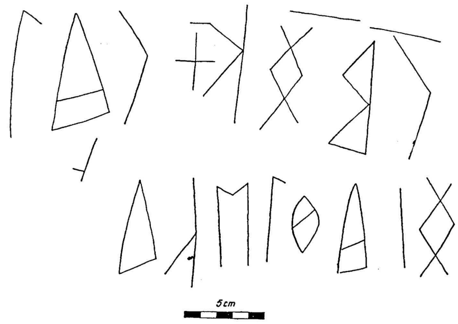

Figure 5.4.1-10: The Homoródkarácsonyfalva Relic (ca. 13th century, see Ráduly 2008; Ferenczi 1979; Ferenczi 1992: 56; Libisch 2004). The transcription is: *first row:* ᒥ ↄ + ↄ|𐲞 ꟼↄ $/n^{\varepsilon}m\ h^{i}s^{\varepsilon}n$ + $n^{\varepsilon}ki/$ *second row:* 𐲔ↄᛖᒥθ |𐲞 $/h^{i}s^{\varepsilon}k$ fiuːn$^{\varepsilon}$k/, it means: '*He does not believe + Him \ I believe Son*' (Ioh. 3, 18), it is a citation from the *Gospel of John* (Vékony 2004; Zelliger 2010-2011).

⌉ CIRCLE ENDED O

The Szekely-Hungarian Rovas 𐲛 O is the derivative of the Carpathian Basin Rovas ꞁ O, and the Szekely-Hungarian Rovas ⌉ CIRCLE ENDED O is the direct descendant of the Glagolitic Ⰹ ON (Vékony 1986). See also the discussion of the Vargyas relic in *Fig. 5.4.1-9*.

𐲝 OPEN OE

This character exists in the N4254; however, with erroneous name: NIKOLSBURG OE. The relic-based naming is originated from the static model of the Rovas paleography from the first half of the 20th century. The system of the character-naming used in the proposals of the Hungarian NB is based on the phonetic value of the character and in case of more than one character representing the same sound value the differentiation is by their topological attributes. E.g. the Szekely-Hungarian Rovas capital letters of /ø/ are the followings:

𐲞	ROVAS CAPITAL LETTER OE
𐲟	ROVAS CAPITAL LETTER OEE
¤	ROVAS CAPITAL LETTER CLOSE OE UE
¤	ROVAS CAPITAL LETTER CLOSE OEE UEE
𐲝	ROVAS CAPITAL LETTER OPEN OE

⩔ SCH

⩔ SCH was derived from 𐲰 ZS, probably in the 17th century. They have distinct sound values: 𐲰 ZS /ʒ/ and ⩔ SCH /ʃ/. Besides their historical significance, there is a need for their use in the present-day Szekely-Hungarian Rovas orthography, especially in German-origin Hungarian family names: *Fischer* 𐲏𐲐⩔𐲖⊗, *Schiller* 𐲏𐲐⩓⩓𐲖⩔.

OPEN V

OPEN V /β/ was also common in the Carpathian Basin Rovas. OPEN V disappeared from Szekely-Hungarian Rovas in the 12^{th}-13^{th} centuries, when the linguistic change /β/>/b/v/ occurred in the Hungarian language (E. Abaffy 2003b, p. 303). Its use is attested in the Székelydálya relic (*Fig. 5.4.1-11*).

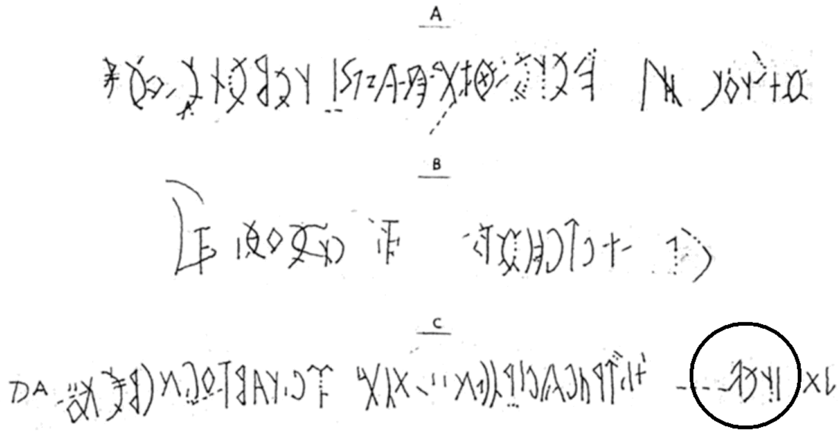

Figure 5.4.1-11: The Székelydálya Inscription (14^{th} c., Ráduly 2000) with OPEN V in the word /$^{\varepsilon}$st$^{\varepsilon}$<u>nd</u>$^{\varepsilon}$β/ 'year' (archaic form of the present-day /$^{\varepsilon}$st$^{\varepsilon}$<u>nd</u>øː/ 'year', Zelliger 2010-2011).

CLOSE OE UE and CLOSE OEE UEE

The characters CLOSE OE UE and CLOSE OEE UEE have been used for denoting both vowels /ø/ (lower mid front rounded vowel) and /y/ (high front rounded vowel). Among others, the famous linguist Gyula Németh also indicated in his Szekely-Hungarian Rovas alphabet that the character CLOSE OEE UEE denoted both vowels (Németh 1934).

Parallelisms

The clear majority of the Rovas characters represent individual phonemes. However, there are some character pairs representing the same phonemes, e.g. F and DIAGONAL F; J and LY; K, OPEN K and SHARP K; O and CIRCLE ENDED O; OE and OPEN OE; R and SIMPLE R; S and SCH.

The case of V and W is slightly different, since earlier the same phoneme (*voiced labiodental fricative*) were represented by both of them, but the latest generations of Hungarian speakers can differentiate between the *voiced labiodental fricative* and the original sound value (*labiovelar approximant*) for W in case of English loanwords. Moreover, their existence is based both on traditional and contemporary Rovas orthographies.

Differently, the Y has multiple sound value, representing /i/ and /j/, especially in the traditional family names.

The character X and Q represents phoneme pairs, the X /ks/; and Q represents /kv/ in traditional names and loanwords.

Note, the characters X, Y as well have long-term traditions in the Szekely-Hungarian Rovas: in 1627, M. Bonyhai Moga used the first Rovas glyphs for X, Y and Q (*Fig. 5.4.1-12*).

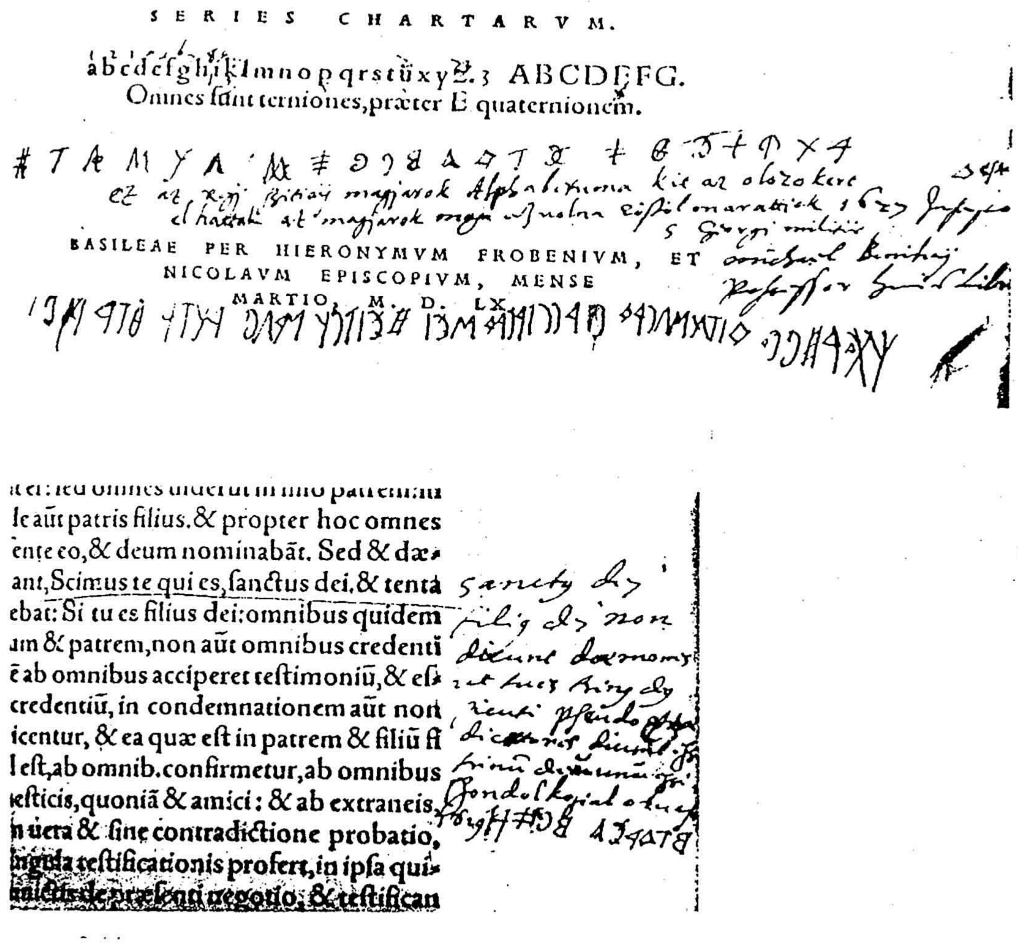

Figure 5.4.1-12: Alphabet and Rovas texts by M. Bonyhai Moga and another person from 1629 (Benkő, E. 1996b, pp. 55–64; 1996c, p. 33)

Contemporary technical issues

In the present-day Rovas orthography, the automated cross-transliteration between the Hungarian Latin orthography and the Szekely-Hungarian Rovas orthography is common in content development. Moreover, multi-script (Latin-based and Rovas) data base processing methods are part of the latest technical developments as well. To avoid information loss in these cases, the use of individual Q, W, X, and Y code points is inevitable.

For the same reasons above, the DZ and DZS characters as well are needed to be encoded individually. It is important, that these two letters represent standard Hungarian phonemes.

Note, that the six characters above are regarded as individual letters in the contemporary Szekely-Hungarian Rovas orthography, even though they developed as ligatures of other letters and became frozen forms turning into new letters. This development is identical to the cases of *W<V+V* and *&<e+t*.

There are alternative opinions about representation of the ligature-origin characters, with their element characters using the ZERO-WIDTH JOINER character between them. However, this method leads to data collision, thus all of these ligature-origin characters need individual code points. For instance, rendering the glyph with two V letters and a ZERO-WIDTH JOINER between

them would lead to ambiguity, as the following example demonstrates. The Hungarian word *evvel* ‘with this’ can be transcribed with individual letters as and it can be written with a ligature as, too. In the latter case, the VV is a true ligature of V + V, where the VV can be rendered by the ZERO-WIDTH JOINER. Consequently, the two distinct ligatures of two V characters (W and VV) would have different orthographical values: the W is an individual letter, but the VV is duplicated letter.

5.4.2. Carpathian Basin Rovas Letters

Common with Szekely-Hungarian Rovas

The following Carpathian Basin Rovas characters are identical to the appropriate Szekely-Hungarian Rovas characters. Thus, there is no need to encode them individually. Instead, it is proposed to use the appropriate Rovas characters from the Szekely-Hungarian Rovas character sub-group.

B, CS, OPEN K, LY, N, GH, P, SZ, OPEN V, SHARP K

Not common with Szekely-Hungarian Rovas

The following characters have strong RTL direction.

FORKED A, SHARP D, DIAGONAL E, FORKED E, OPEN F, FORKED G, SIMPLE G, SHARP H, SHARP CH, ANGLED I, CIRCLE ENDED I, ARCHED I, CLOSE J, KUE, FORKED L, SIMPLE L, OPEN M, NG, SHARP N, OPEN O, SIMPLE P, ARCHED Q, CLOSE R, CLOSE S, CLOSE T, OPEN T, SHARP U, FORKED U, ARCHED UE, OPEN Z

5.5. Ligatures

Ligatures are widely used in the Rovas.[10] These are usually not systematic; they are applied on occasion mainly for space saving purposes. In modern computing, the ligatures belong to the presentation and not the character definition; they should be generated by improved digital typesetting techniques.

6. Ordering

In ordering, the Common Template Table defined in the International Standard ISO/IEC 14651 is adapted (LaBonté 2007a, LaBonté 2007b). The ordering requires different levels:

Level 1: The first level renders the texts to be sorted case-insensitive and insensitive to diacritical marks, and to all special characters. In the case of each sub-group, the following order is required:

Szekely-Hungarian Rovas sub-group

A < AA < B < C < CS < D < DZ < DZS < E < CLOSE E < EE < F < DIAGONAL F < G < GH < GY < H < CH < I < II < J < K < SHARP K <

[10] http://books.google.hu/books?id=TyK8azCqC34C&pg=PA184, *Section 8.1.8*.

𐳎 OPEN K < 𐳏 L < 𐳐 LY < 𐳑 M < 𐳒 MB < 𐳓 N < 𐳔 NY < 𐳕 O < 𐳖 CIRCLE ENDED O < 𐳗 OO < 𐳘 OE < 𐳙 OPEN OE < 𐳚 OEE < 𐳛 P < 𐳜 Q < 𐳝 R < 𐳞 SIMPLE R < 𐳟 S < 𐳠 SCH < 𐳡 SZ < 𐳢 T < 𐳣 TY < 𐳤 U < 𐳥 UU < 𐳦 CLOSE OE UE < 𐳧 OPEN UE < 𐳨 CLOSE OEE UEE < 𐳩 OPEN UEE < 𐳪 V < 𐳫 OPEN V < 𐳬 W < 𐳭 X < 𐳮 Y < 𐳯 Z < 𐳰 ZS < 𐳱 AMB < 𐳲 AND < 𐳳 ANT < 𐳴 EMP < 𐳵 ENC < 𐳶 ENT < 𐳷 MB < 𐳸 NAP < 𐳹 TPRU < 𐳺 TPRUS < 𐳻 NB < 𐳼 UNK < 𐳽 US

Carpathian Basin Rovas sub-group

𐳀 FORKED A < 𐳁 B < 𐳂 CS < 𐳃 SHARP D < 𐳄 DIAGONAL E < 𐳅 FORKED E < 𐳆 OPEN F < 𐳇 FORKED G < 𐳈 SIMPLE G < 𐳉 SHARP H < 𐳊 SHARP CH < 𐳋 ANGLED I < 𐳌 CIRCLE ENDED I < 𐳍 ARCHED I < 𐳎 CLOSE J < 𐳏 OPEN K < 𐳐 SHARP K < 𐳑 KUE < 𐳒 FORKED L < 𐳓 SIMPLE L < 𐳔 LY < 𐳕 OPEN M < 𐳖 N < 𐳗 SHARP N < 𐳘 NG < 𐳙 OPEN O < 𐳚 GH < 𐳛 P < 𐳜 SIMPLE P < 𐳝 ARCHED Q < 𐳞 CLOSE R < 𐳟 CLOSE S < 𐳠 SZ < 𐳡 CLOSE T < 𐳢 OPEN T < 𐳣 SHARP U < 𐳤 FORKED U < 𐳥 ARCHED UE < 𐳦 OPEN V < 𐳧 OPEN Z

Rovas Numerals sub-group

𐳇 ONE < 𐳈 FIVE < 𐳉 TEN < 𐳊 FIFTY < 𐳋 ONE HUNDRED < 𐳌 FIVE HUNDRED < 𐳍 ONE THOUSAND

Level 2: This breaks ties on quasi-homographs (strings differ only because they have different diacritical marks). In ordering table (LaBonté 2010):
<[A] [Duplicating mark]>:
level 1 : [a][a]
level 2 : [distinction entry indicating that it is not exactly [A][A] but [A][duplicating mark]]
level 3 : [upper case]
[...]
<[b] [Duplicating mark]>:
level 1 : [b][b]
level 2 : [distinction entry indicating that it is not exactly [b][b] but [b][duplicating mark]]
level 3 : [lower case]
[...]
In the Rovas there is no diacritical mark; however, it cannot be discounted that someone will use combining characters in entering the data (LaBonté 2010).
Level 3: This level breaks ties for quasi-homographs that differ only because uppercase and lowercase characters are used. In the Szekely-Hungarian Rovas orthography all characters have uppercase and lowercase versions.

Level 4: In the case of the Rovas, the Level 4 ordering does not differ from the same level in the case of the usual Hungarian Latin orthography (LaBonté 2012).

7. Unicode Character Properties

In the following the proposed naming and coding of the ROVAS block is listed. These charts contain only proposed assignments.

7.1. Code chart of the PUNCTUATION SYMBOLS in Supplemental Punctuation block in BMP

2E00 Supplemental Punctuation (portion) 2E7F

	2E4
1	⹁ 2E41
2	⹂ 2E42
3	⹃ 2E43
4	⹄ 2E44
5	⹅ 2E45
6	⹆ 2E46
7	⹇ 2E47
8	⹈ 2E48
9	⹉ 2E49
A	⹊ 2E4A

2E41 ⹁ REVERSED COMMA

- Used in Szekely-Hungarian Rovas with right-to-left and boustrophedon directions

→ U+002C , comma

→ U+060C ، Arabic comma

2E42 ⹂ DOUBLE LOW-REVERSED-9 QUOTATION MARK

- used in Szekely-Hungarian Rovas with right-to-left and boustrophedon directions

→ U+201E „ double low-9 quotation mark

2E43 ⹃ WORD SEPARATOR CROSS

- used in Szekely-Hungarian Rovas

→ U+00D7 × Multiplication sign

2E44 ⹄ DOUBLE COMMA-LIKE HYPHEN

- used in Szekely-Hungarian Rovas with right-to-left direction in historical Rovas relics

2E45 ⹅ DOUBLE CROSS FULL STOP

- used in Szekely-Hungarian Rovas

2E46 ⹆ BEGINNING MARK RIGHT

- used in Szekely-Hungarian Rovas

→ U+29D8 ⧘ LEFT WIGGLY FENCE

2E47 ⸗ BEGINNING MARK LEFT
- used in Szekely-Hungarian Rovas

→ U+29D9 ⸗ RIGHT WIGGLY FENCE

2E48 ⸙ END OF MESSAGE MARK
- used in Szekely-Hungarian Rovas

2E49 ⸚ WORD SEPARATOR VERTICAL CROSS
- Used in historic Szekely-Hungarian Rovas inscriptions
- Usually uses full cap height

→ 002B Plus Sign

2E4A ⸛ WORD SEPARATOR VERTICAL BAR
- Used in historic Carpathian Basin Rovas inscriptions

7.2. Code chart of the ROVAS NUMERALS sub-group of the ROVAS block in SMP

1x100 ROVAS Characters 1x10F

	1x10
0	1x100
1	1x101
2	1x102
3	1x103
4	1x104
5	1x105
6	1x106
7	1x107
8	1x108
9	1x109
A	1x10A
B	1x10B
C	1x10C
D	1x10D
E	1x10E
F	1x10F

NUMBERS

1x100; ▧ <reserved, shall not be used>

- Reserved for ROVAS NUMBER ZERO

1x101; Ⅰ ROVAS NUMBER ONE;No;0;R;;;;;N;;;;;

1x102; ▧ <reserved, shall not be used>

- Reserved for Ⅱ ROVAS NUMBER TWO

1x103; ▧ <reserved, shall not be used>

- Reserved for Ⅲ ROVAS NUMBER THREE

1x104; ▧ <reserved, shall not be used>

- Reserved for Ⅳ ROVAS NUMBER FOUR

1x105; Ⅴ ROVAS NUMBER FIVE;No;0;R;;;;;N;;;;;

1x106; Ⅹ ROVAS NUMBER TEN;No;0;R;;;;;N;;;;;

1x107; Ⅴ ROVAS NUMBER FIFTY;No;0;R;;;;;N;;;;;

1x108; Ⅹ ROVAS NUMBER ONE HUNDRED;No;0;R;;;;;N;;;;;

1x109; Ⅴ ROVAS NUMBER FIVE HUNDRED;No;0;R;;;;;N;;;;;

1x10A; Ⅹ ROVAS NUMBER ONE THOUSAND;No;0;R;;;;;N;;;;;

1x10B; (This position shall not be used)

1x10C; (This position shall not be used)

1x10D; (This position shall not be used)

1x10E; (This position shall not be used

1x10F; (This position shall not be used

7.3. Code chart of the SZEKELY-HUNGARIAN ROVAS sub-group of the ROVAS block in SMP

1x000 ROVAS Characters 1x09F

	1x00	1x01	1x02	1x03	1x04	1x05	1x06	1x07	1x08	1x09
0	1x000	1x010	1x020	1x030	1x040	1x050	1x060	1x070	1x080	1x090
1	1x001	1x011	1x021	1x031	1x041	1x051	1x061	1x071	1x081	1x091
2	1x002	1x012	1x022	1x032	1x042	1x052	1x062	1x072	1x082	1x092
3	1x003	1x013	1x023	1x033	1x043	1x053	1x063	1x073	1x083	1x093
4	1x004	1x014	1x024	1x034	1x044	1x054	1x064	1x074	1x084	1x094
5	1x005	1x015	1x025	1x035	1x045	1x055	1x065	1x075	1x085	1x095
6	1x006	1x016	1x026	1x036	1x046	1x056	1x066	1x076	1x086	1x096
7	1x007	1x017	1x027	1x037	1x047	1x057	1x067	1x077	1x087	1x097
8	1x008	1x018	1x028	1x038	1x048	1x058	1x068	1x078	1x088	1x098
9	1x009	1x019	1x029	1x039	1x049	1x059	1x069	1x079	1x089	1x099
A	1x00A	1x01A	1x02A	1x03A	1x04A	1x05A	1x06A	1x07A	1x08A	1x09A
B	1x00B	1x01B	1x02B	1x03B	1x04B	1x05B	1x06B	1x07B	1x08B	1x09B
C	1x00C	1x01C	1x02C	1x03C	1x04C	1x05C	1x06C	1x07C	1x08C	1x09C
D	1x00D	1x01D	1x02D	1x03D	1x04D	1x05D	1x06D	1x07D	1x08D	1x09D
E	1x00E	1x01E	1x02E	1x03E	1x04E	1x05E	1x06E	1x07E	1x08E	1x09E
F	1x00F	1x01F	1x02F	1x03F	1x04F	1x05F	1x06F	1x07F	1x08F	1x09F

UPPERCASE LETTERS

1x000; ROVAS CAPITAL LETTER A
1x001; ROVAS CAPITAL LETTER AA
1x002; ROVAS CAPITAL LETTER B
1x003; ROVAS CAPITAL LETTER C
1x004; ROVAS CAPITAL LETTER CS

1x005; 𐆴 ROVAS CAPITAL LETTER D
→ 1x00F; 𐆵 rovas capital letter i
1x006; 𐆶 ROVAS CAPITAL LETTER DZ
1x007; 𐆷 ROVAS CAPITAL LETTER DZS
1x008; 𐆸 ROVAS CAPITAL LETTER E
1x009; 𐆹 ROVAS CAPITAL LETTER CLOSE E
→ 1x00E; 𐆾 rovas capital letter h
1x00A; 𐆺 ROVAS CAPITAL LETTER EE
1x00B; 𐆻 ROVAS CAPITAL LETTER F
1x00C; 𐆼 ROVAS CAPITAL LETTER G
1x00D; 𐆽 ROVAS CAPITAL LETTER GY
1x00E; 𐆾 ROVAS CAPITAL LETTER H
→ 1x009; 𐆹 rovas capital letter close e
1x00F; 𐆵 ROVAS CAPITAL LETTER I
→ 1x005; 𐆴 rovas capital letter d
1x010; 𐆿 ROVAS CAPITAL LETTER II
1x011; 𐇀 ROVAS CAPITAL LETTER J
1x012; 𐇁 ROVAS CAPITAL LETTER K
1x013; 𐇂 ROVAS CAPITAL LETTER OPEN K
1x014; 𐇃 ROVAS CAPITAL LETTER L
1x015; 𐇄 ROVAS CAPITAL LETTER LY
→ 1x03B; 𐇻 rovas capital letter us
→ 1x03D; 𐇄 rovas capital letter diagonal f
1x016; 𐇅 ROVAS CAPITAL LETTER M
1x017; 𐇆 ROVAS CAPITAL LETTER N
1x018; 𐇇 ROVAS CAPITAL LETTER NY
1x019; 𐇈 ROVAS CAPITAL LETTER O
1x01A; 𐇉 ROVAS CAPITAL LETTER OO
1x01B; 𐇊 ROVAS CAPITAL LETTER OE
1x01C; 𐇋 ROVAS CAPITAL LETTER OEE
1x01D; 𐇌 ROVAS CAPITAL LETTER P
1x01E; 𐇍 ROVAS CAPITAL LETTER Q
1x01F; 𐇎 ROVAS CAPITAL LETTER R
1x020; 𐇏 ROVAS CAPITAL LETTER S
1x021; 𐇐 ROVAS CAPITAL LETTER SZ
1x022; 𐇑 ROVAS CAPITAL LETTER T
1x023; 𐇒 ROVAS CAPITAL LETTER TY
1x024; 𐇓 ROVAS CAPITAL LETTER U
1x025; 𐇔 ROVAS CAPITAL LETTER UU
1x026; 𐇕 ROVAS CAPITAL LETTER CLOSE OE UE
→ 1x028; 𐇖 rovas capital letter close oee uee
1x027; 𐇗 ROVAS CAPITAL LETTER OPEN UE
→ 1x029; 𐇘 rovas capital letter open uee
→ 1x03F; 𐇔 rovas capital letter gh
→ 1x042; 𐇙 rovas capital letter open oe
1x028; 𐇖 ROVAS CAPITAL LETTER CLOSE OEE UEE
→ 1x026; 𐇕 rovas capital letter close oe ue
1x029; 𐇘 ROVAS CAPITAL LETTER OPEN UEE

→ 1x027; rovas capital letter open ue
→ 1x03F; rovas capital letter gh
→ 1x042; rovas capital letter open oe
1x02A; ROVAS CAPITAL LETTER V
1x02B; ROVAS CAPITAL LETTER W
1x02C; ROVAS CAPITAL LETTER X
1x02D; ROVAS CAPITAL LETTER Y
→ 1x045; rovas capital letter open v
1x02E; ROVAS CAPITAL LETTER Z
1x02F; ROVAS CAPITAL LETTER ZS
1x030; ROVAS CAPITAL LETTER AMB
1x031; ROVAS CAPITAL LETTER AND
1x032; ROVAS CAPITAL LETTER ANT
→ 1x034; rovas capital letter ent
1x033; ROVAS CAPITAL LETTER EMP
1x034; ROVAS CAPITAL LETTER ENT
→ 1x032; rovas capital letter ant
1x035; ROVAS CAPITAL LETTER TPRUS
1x036; ROVAS CAPITAL LETTER TPRU
1x037; ROVAS CAPITAL LETTER MB
1x038; ROVAS CAPITAL LETTER NAP
1x039; ROVAS CAPITAL LETTER NB
1x03A; ROVAS CAPITAL LETTER UNK
1x03B; ROVAS CAPITAL LETTER US
→ 1x015; rovas capital letter ly
→ 1x03D; rovas capital letter diagonal f
1x03C; ROVAS CAPITAL LETTER ENC
1x03D; ROVAS CAPITAL LETTER DIAGONAL F
→ 1x015; rovas capital letter ly
→ 1x03B; rovas capital letter us
1x03E; ROVAS CAPITAL LETTER CH
1x03F; ROVAS CAPITAL LETTER GH
→ 1x027; rovas capital letter open ue
→ 1x029; rovas capital letter open uee
→ 1x042; rovas capital letter open oe
1x040; ROVAS CAPITAL LETTER SHARP K
1x041; ROVAS CAPITAL LETTER CIRCLE ENDED O
1x042; ROVAS CAPITAL LETTER OPEN OE
→ 1x027; rovas capital letter open ue
→ 1x029; rovas capital letter open uee
→ 1x03F; rovas capital letter gh
1x043; ROVAS CAPITAL LETTER SIMPLE R
1x044; ROVAS CAPITAL LETTER SCH
1x045; ROVAS CAPITAL LETTER OPEN V
→ 1x02D; rovas capital letter y
1x046; (This position shall not be used)
1x047; (This position shall not be used)
1x048; (This position shall not be used)

1x049; (This position shall not be used)
1x04A; (This position shall not be used)
1x04B; (This position shall not be used)
1x04C; (This position shall not be used)
1x04D; (This position shall not be used)
1x04E; (This position shall not be used)
1x04F; (This position shall not be used)

LOWERCASE LETTERS

1x050; 𐴀 ROVAS SMALL LETTER A
1x051; 𐴁 ROVAS SMALL LETTER AA
1x052; 𐴂 ROVAS SMALL LETTER B
1x053; 𐴃 ROVAS SMALL LETTER C
1x054; 𐴄 ROVAS SMALL LETTER CS
1x055; 𐴅 ROVAS SMALL LETTER D
→ 1x05F; 𐴟 rovas small letter i
1x056; 𐴆 ROVAS SMALL LETTER DZ
1x057; 𐴇 ROVAS SMALL LETTER DZS
1x058; 𐴈 ROVAS SMALL LETTER E
1x059; 𐴉 ROVAS SMALL LETTER CLOSE E
→ 1x05E; 𐴞 rovas small letter h
1x05A; 𐴊 ROVAS SMALL LETTER EE
1x05B; 𐴋 ROVAS SMALL LETTER F
1x05C; 𐴌 ROVAS SMALL LETTER G
1x05D; 𐴍 ROVAS SMALL LETTER GY
1x05E; 𐴎 ROVAS SMALL LETTER H
→ 1x059; 𐴉 rovas small letter close e
1x05F; 𐴏 ROVAS SMALL LETTER I
→ 1x055; 𐴅 rovas small letter d
1x060; 𐴐 ROVAS SMALL LETTER II
1x061; 𐴑 ROVAS SMALL LETTER J
1x062; 𐴒 ROVAS SMALL LETTER K
1x063; 𐴓 ROVAS SMALL LETTER OPEN K
1x064; 𐴔 ROVAS SMALL LETTER L
1x065; 𐴕 ROVAS SMALL LETTER LY
→ 1x08B; 𐴫 rovas small letter us
→ 1x08D; 𐴭 rovas small letter diagonal f
1x066; 𐴖 ROVAS SMALL LETTER M
1x067; 𐴗 ROVAS SMALL LETTER N
1x068; 𐴘 ROVAS SMALL LETTER NY
1x069; 𐴙 ROVAS SMALL LETTER O
1x06A; 𐴚 ROVAS SMALL LETTER OO
1x06B; 𐴛 ROVAS SMALL LETTER OE
1x06C; 𐴜 ROVAS SMALL LETTER OEE
1x06D; 𐴝 ROVAS SMALL LETTER P
1x06E; 𐴞 ROVAS SMALL LETTER Q
1x06F; 𐴟 ROVAS SMALL LETTER R
1x070; 𐴠 ROVAS SMALL LETTER S
1x071; 𐴡 ROVAS SMALL LETTER SZ
1x072; 𐴢 ROVAS SMALL LETTER T
1x073; 𐴣 ROVAS SMALL LETTER TY
1x074; 𐴤 ROVAS SMALL LETTER U
1x075; 𐴥 ROVAS SMALL LETTER UU
1x076; 𐴦 ROVAS SMALL LETTER CLOSE OE UE
→ 1x078; 𐴨 rovas small letter close oee uee

1x077; ᓬ ROVAS SMALL LETTER OPEN UE
→ 1x079; ᓭ rovas small letter open uee
→ 1x08F; ᓠ rovas small letter gh
→ 1x092; ᓴ rovas small letter open oe
1x078; ᓮ ROVAS SMALL LETTER CLOSE OEE UEE
→ 1x076; ᓨ rovas small letter close oe ue
1x079; ᓭ ROVAS SMALL LETTER OPEN UEE
→ 1x077; ᓬ rovas small letter open ue
→ 1x08F; ᓠ rovas small letter gh
→ 1x092; ᓴ rovas small letter open oe
1x07A; ᓰ ROVAS SMALL LETTER V
1x07B; ᓱ ROVAS SMALL LETTER W
1x07C; ᓲ ROVAS SMALL LETTER X
1x07D; ᓳ ROVAS SMALL LETTER Y
→ 1x095; ᔑ rovas small letter open v
1x07E; ᓴ ROVAS SMALL LETTER Z
1x07F; ᓵ ROVAS SMALL LETTER ZS
1x080; ᓶ ROVAS SMALL LETTER AMB
1x081; ᓷ ROVAS SMALL LETTER AND
1x082; ᓸ ROVAS SMALL LETTER ANT
→ 1x084; ᓹ rovas small letter ent
1x083; ᓺ ROVAS SMALL LETTER EMP
1x084; ᓹ ROVAS SMALL LETTER ENT
→ 1x082; ᓸ rovas small letter ant
1x085; ᓻ ROVAS SMALL LETTER TPRUS
1x086; ᓼ ROVAS SMALL LETTER TPRU
1x087; ᓽ ROVAS SMALL LETTER MB
1x088; ᓾ ROVAS SMALL LETTER NAP
1x089; ᓿ ROVAS SMALL LETTER NB
1x08A; ᔀ ROVAS SMALL LETTER UNK
1x08B; ᔁ ROVAS SMALL LETTER US
→ 1x08D; ᔃ rovas small letter diagonal f
→ 1x065; ᔁ rovas small letter ly
1x08C; ᔂ ROVAS SMALL LETTER ENC
1x08D; ᔃ ROVAS SMALL LETTER DIAGONAL F
→ 1x065; ᔁ rovas small letter ly
→ 1x08B; ᔁ rovas small letter us
1x08E; ᔄ ROVAS SMALL LETTER CH
1x08F; ᔅ ROVAS SMALL LETTER GH
→ 1x077; ᓬ rovas small letter open ue
→ 1x079; ᓭ rovas small letter open uee
→ 1x092; ᓴ rovas small letter open oe
1x090; ᔆ ROVAS SMALL LETTER SHARP K
1x091; ᔇ ROVAS SMALL LETTER CIRCLE ENDED O
1x092; ᔈ ROVAS SMALL LETTER OPEN OE
→ 1x077; ᓬ rovas small letter open ue
→ 1x079; ᓭ rovas small letter open uee
→ 1x08F; ᓠ rovas small letter gh
1x093; ᔉ ROVAS SMALL LETTER SIMPLE R
1x094; ᔊ ROVAS SMALL LETTER SCH
1x095; ᔑ ROVAS SMALL LETTER OPEN V
→ 1x07D; ᓳ rovas small letter y
1x096; (This position shall not be used)

1x097; (This position shall not be used)
1x098; (This position shall not be used)
1x099; (This position shall not be used)
1x09A; (This position shall not be used)
1x09B; (This position shall not be used)
1x09C; (This position shall not be used)
1x09D; (This position shall not be used)
1x09E; (This position shall not be used)
1x09F; (This position shall not be used)

7.4. Code chart of the CARPATHIAN BASIN ROVAS sub-group of the ROVAS block in SMP

1x0A0 **ROVAS Characters** **1x0BF**

	1x0A	1x0B
0	 1x0A0	 1x0B0
1	 1x0A1	 1x0B1
2	 1x0A2	 1x0B2
3	 1x0A3	 1x0B3
4	 1x0A4	 1x0B4
5	 1x0A5	 1x0B5
6	 1x0A6	 1x0B6
7	 1x0A7	 1x0B7
8	 1x0A8	 1x0B8
9	 1x0A9	 1x0B9
A	 1x0AA	 1x0BA
B	 1x0AB	 1x0BB
C	 1x0AC	 1x0BC
D	 1x0AD	 1x0BD
E	 1x0AE	1x0BE
F	1x0AF	1x0BF

1x0A0; ROVAS LETTER FORKED A
1x0A1; ROVAS LETTER SHARP D
1x0A2; ROVAS LETTER DIAGONAL E
1x0A3; ROVAS LETTER FORKED E

→ 1x022; rovas capital letter t
1x0A4; ROVAS LETTER OPEN F
→ 1x045; rovas capital letter open v
1x0A5; ROVAS LETTER FORKED G
1x0A6; ROVAS LETTER SIMPLE G
→ 1x043; rovas capital letter simple r
1x0A7; ROVAS LETTER SHARP H
1x0A8; ROVAS LETTER SHARP CH
1x0A9; ROVÁS LETTER ANGLED I
→ 1x011; rovas capital letter j
→ 1x0B4; rovas letter simple p
1x0AA; ROVAS LETTER CIRCLE ENDED I
1x0AB; ROVAS LETTER ARCHED I
1x0AC; ROVAS LETTER CLOSE J
→ 1x018; rovas capital letter ny
1x0AD; ROVAS LETTER KUE
1x0AE; ROVAS LETTER FORKED L
1x0AF; ROVAS LETTER SIMPLE L
→ 1x017; rovas capital letter n
1x0B0; ROVAS LETTER OPEN M
1x0B1; ROVAS LETTER NG
1x0B2; ROVAS LETTER SHARP N
1x0B3; ROVAS LETTER OPEN O
1x0B4; ROVAS LETTER SIMPLE P
→ 1x011; rovas capital letter j
1x0B5; ROVAS LETTER ARCHED Q
1x0B6; ROVAS LETTER CLOSE R
1x0B7; ROVAS LETTER CLOSE S
1x0B8; ROVAS LETTER CLOSE T
1x0B9; ROVAS LETTER OPEN T
1x0BA; ROVAS LETTER SHARP U
1x0BB; ROVAS LETTER FORKED U
1x0BC; ROVAS LETTER ARCHED UE
1x0BD; ROVAS LETTER OPEN Z
1x0BE; (This position shall not be used)
1x0BF; (This position shall not be used)

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9. Appendix: Proposal Summary form

ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[11]
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 for encoding the Rovas in the UCS**
2. Requester's name:	**Jenő Demeczky, Dr. Gábor Hosszú, Tamás Rumi, László Sípos, & Dr. Erzsébet Zelliger**
3. Requester type (Member body/Liaison/Individual contribution):	Individual contribution
4. Submission date:	October 14, 2012
5. Requester's reference (if applicable):	*http://wiki.rovas.info, http://www.rovas.info*
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): *Yes*
      Proposed name of script: **Rovas**
   b. The proposal is for addition of character(s) to an existing block: *No*
      Name of the existing block:
2. Number of characters in proposal: *187*
3. Proposed category (select one from below - see section 2.2 of P&P document):

A-Contemporary	X	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*

[11] Form number: N3152-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)

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

5. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard? *Tamás Rumi and László Sípos*

If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used: *Tamás Rumi and László Sípos, FontCreator*

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)? *Yes*

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. – **See below.**

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? *Tamás Rumi, Rovas Info News Portal, Rovaspedia; László Sípos, Rovas Foundation*

If YES, available relevant documents: *Yes*

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

Reference: *Contemporary use by Hungarians, in Hungary, the Carpathian Basin and world-wide.*

4. The context of use for the proposed characters (type of use; common or rare) *Common with increasing popularity*

Reference: *All characters form a complete system; they are mostly used contemporary. Increasing number of home pages use Szekely-Hungarian Rovas.*

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

If YES, where? Reference: *In Hungary, in Romania (mainly in Szekelyland), in Slovakia, in Serbia, in Ukraine and in every place where Hungarians live. There are competitions of Szekely-Hungarian Rovas users in Germany, in USA, in Canada among others. Scholars and researchers dealing with Rovas all over the world.*

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? *No*

If YES, is a rationale provided?

If YES, reference:

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? *No*

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: