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Universal Multiple-Octet Coded Character Set
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Doc Type: Working Group Document**Title: Revised proposal for encoding the Szekely-Hungarian Rovas, Carpathian Basin Rovas and Khazarian Rovas scripts into the Rovas block in the SMP of the UCS****Source: Dr. Gábor Hosszú (Hungarian Standards Institution)****Status: National Body Contribution****Action: For consideration by UTC and ISO/IEC JTC1/SC2/WG2****Date: 2012-01-11**

This document replaces the N4007 (2011-05-21)¹ for the **Szekely-Hungarian Rovas**, the N4144 (2011-10-12)² for the **Carpathian Basin Rovas**, and the N4145 (2011-10-12)³ for the **Khazarian Rovas**. The proposal is based on a transparent and expert backed process involving both Unicode-computing specialists and representatives of the Rovas (*r-o-w-a-sh*) user community (Hosszú, Rumi, & Sípos 2008). Moreover, it is based on the recent results of the archeology, linguistics and paleography. Comparing to the previous proposals, the most important improvements are the following: (i) merging the sets of the three Rovas orthographies into one Rovas block, (ii) adding topology-based attributes to the character names in order to avoid their collisions in the merged Rovas block, and (iii) slight refinements in the transcriptions of the historical inscriptions and the character repertoire. The current revised document contains additional examples of the Rovas orthographies and smaller improvements of the previous version of the N4183 (2011-12-15).

The proposed **Rovas block** is intended to represent a unified script that covers the **Szekely-Hungarian Rovas**, **Carpathian Basin Rovas**, and **Khazarian Rovas** alphabets. The Szekely-Hungarian Rovas alphabet can be written with characters in either left-to-right or right-to-left direction. The glyphs in the code chart of this proposal are shown with right-to-left orientation.

The contributions for encoding the Szekely-Hungarian Rovas (N4007), the Carpathian Basin Rovas (N4144), and the Khazarian Rovas (N4145), moreover, the book “*Heritage of Scribes*”⁴ contain several examples for using each Rovas character, therefore in this proposal only few examples demonstrate the three Rovas orthographies.

The document contains the proposal summary form. Please send any response to this proposal to Gábor Hosszú (email: hosszu@eet.bme.hu), representative of the Hungarian National Body.

¹ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4007.pdf>

² <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4144.pdf>

³ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4145.pdf>

⁴ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA1>

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1. About the standardization

Name of the script

The ad-hoc report N4110 (2011-06-08)⁵ recommended the use of the incorrect term “Old Hungarian” as the script name, instead of the correct term “**Szekely-Hungarian Rovas**”. Note that N4110 essentially annulled the scientifically backed contributions of the Hungarian NB (N4007⁶, N4055⁷, N4076⁸, N4080⁹). The term “Old Hungarian” is inappropriate 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 wildly

⁵ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4110.pdf>

⁶ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4007.pdf>

⁷ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4055.pdf>

⁸ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4076.pdf>

⁹ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4080.pdf>

different to the Szekely-Hungarian Rovas script (see *Ch. 3* of N4120¹⁰). 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 Szekely-Hungarian Rovas is misleading. Consequently, using the term “Old Hungarian” for the totally different Szekely-Hungarian Rovas script will lead to a serious collision.

- The Szekely-Hungarian Rovas script has been developed about the 8th century, in the Ancient Hungarian linguistic period (1st millennium BC – 896 AD, see E. Abaffy 2003a:106-128), before the Old Hungarian linguistic period (896–1526, see E. Abaffy 2003b:301-351). Consequently, using the name “Old Hungarian script” for an earlier script would be misleading.

Moreover, there are several arguments for the term “Rovas”:

- Throughout history, the term **Rovas** has been widely used, moreover have found common use in the Hungarian language today. Although the term “Rovas” is of Hungarian-origin, it has been widely used in numerous languages; see in the *Ch. 4* of N4120.¹¹
- The term “Rovas” is a category name; three related scripts belong to this script family, namely: **Szekely-Hungarian Rovas** (N4007)¹², **Carpathian Basin Rovas** (N4144)¹³, and **Khazarian Rovas** (N4145)¹⁴. The close relation of Carpathian Basin Rovas to Szekely-Hungarian Rovas has been shown by linguist and Turkologist Gyula Németh in 1932 (Németh 1932a:65-85 & 129-139; Németh 1932b; Németh 1934; Vékony 1985:71-84). Moreover, according to the archaeologist-historian István Erdélyi, the Khazarian Rovas is related to Carpathian Basin Rovas and Szekely-Hungarian Rovas (Erdélyi 1982:182).
- The research into the field of the Rovas scripts are 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 as only a small portion of the Hungarian publications on this topic have been translated. The contributions of the Hungarian NB use and refer to the results of international and Hungarian scholars. More details about the Rovas script family can be found in the book “*Heritage of Scribes*”, which summarizes the results of the Hungarian and international Rovas-related paleography of the last decades.¹⁵

Shapes of the glyphs

In the N4110¹⁶ and therefore in the current PDAM 1.2 – specially ornamented glyphs are used. This style does not show any tradition of the Rovas scripting. Consequently, it is unacceptable in the standard. Since the N4110, and therefore the SC2 N 4201 uses these glyphs, **none of the glyphs in the Draft Amendment (PDAM) 1.2 is adequate for encoding and therefore these glyphs are unacceptable by the Hungarian NB**. The Hungarian NB can provide the necessary font for encoding the Rovas scripts.

¹⁰ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4120.pdf>

¹¹ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4120.pdf>

¹² <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4007.pdf>

¹³ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4144.pdf>

¹⁴ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4145.pdf>

¹⁵ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA1>

¹⁶ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4110.pdf>

Names of the characters

The proposed character names of N4110 are incorrect. These are based on a few medieval relics. However, the characters of this script have well accepted names both in scientific and popular literature. The main reason for encoding the Szekely-Hungarian Rovas script is for present-day use, therefore, the contemporary character names of the letters has to be used in the standard. The archaic character names used in the N4110 resolution shows an outdated state of the Rovas-related paleography of the early 20th century. During that time, a Szekely-Hungarian Rovas relic, the so-called Nikolsburg Alphabet was the only significant Rovas relic. Based on this, only a static view of the Szekely-Hungarian Rovas scripts existed in the early 20th century. However, after exploring several archaeological finds in the 20th–21st centuries, significant earlier Rovas relics were found, making possible further advances in the history of Rovas scripts.

The N4110 uses the consonant names of the so-called Nikolsburg Alphabet.¹⁷ However, according to the linguist-dialectologist Assoc. Prof. E. Zelliger, these consonant names **were never identical to the Hungarian letter-names; they do not conform to any Hungarian linguistic tradition.** As Zelliger stated, **these consonant names were surely erroneous** (Zelliger 2010–2011). A few further Szekely-Hungarian Rovas alphabets, – which were related to the Nikolsburg Alphabet, according to the archaeologist-historian Vékony (Vékony 2004a:60-108) – used the consonant names of the Nikolsburg Relic. 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. 4.1-2*). Consequently, **the character names proposed in the N4110 are scientifically not backed and therefore inappropriate for the encoding.**

Another essential condition to be considered is the vital present-day use of the Szekely-Hungarian Rovas orthography. The user base of the Szekely-Hungarian Rovas is represented in every country in Europe where Hungarian population exists and in the global Hungarian community as well. Currently, in every part of Hungarian society including the state administration, the number of Szekely-Hungarian Rovas users is dynamically increasing. This strong and conscious user support is clearly manifested, as in the Hungarian NB professional and civil Rovas stakeholders officially support the three Rovas proposals – the Szekely-Hungarian Rovas (N4007), the Carpathian Basin Rovas (N4144), and the Khazarian Rovas (N4145).

2. Introduction to the Rovas orthographies

According to the Hungarian paleography, the *Szekely-Hungarian Rovas* (N4007), the *Carpathian Basin Rovas* (N4144) and the *Khazarian Rovas* (N4145) belong to the family of Rovas scripts.¹⁸ Their common feature is that none of them was created artificially but they were gradually differentiated after the geographical isolation of their users. Their genealogy is discussed in the book “*Heritage of Scribes*”, which is fully available from Google Books.¹⁹

¹⁷ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA196>

¹⁸ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA19>

¹⁹ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA1>

2.1. The Szekely-Hungarian Rovas

The *Szekely-Hungarian Rovas*²⁰ is a contemporary writing system of the Hungarians. In the last decades, there has been much research on exploring its roots (Róna-Tas 1992; Vásáry 1974; Györffy & Harmatta 1996; Róna-Tas 199). The Szekely-Hungarian Rovas was in continuous use throughout the history of Hungary.²¹ Presently, its usage is extensive in every field of daily life, education, economy, publications, etc. Its increasing use is 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 Szekely-Hungarian Rovas uses both the left-to-right (LTR) and the right-to-left (RTL) directions, but the latter is the original and dominant direction. Furthermore, the boustrophedon (alternating line directions) is also possible, even if not frequently applied. 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 right-to-left and left-to-right.

The Szekely-Hungarian Rovas has been coherent with the Latin-based Hungarian orthography (Old Hungarian text up to 1832), thus casing appeared in the Szekely-Hungarian Rovas already 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, to improve reading speed, lower case character sets are 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.

2.2. The Carpathian Basin Rovas

The *Carpathian Basin Rovas*²² script was an extinct writing system, which was then revitalized in 2009. Based on the archaeological findings the use of Carpathian Basin Rovas is proven in the 7th-11th centuries. There are some tracks it survived up to the 12th century.²³ The clear majority of the historical texts on the relics are in Hungarian; however, there are some inscriptions also in Onogur, As-Alan, Slavic, and Eurasian Avar (Vékony 2002).

The individual development of the Carpathian Basin Rovas started when the Carpathian Basin was occupied by the Avars in 567 and then by the Onogurs in 670. From that time Rovas scripting in the Carpathian Basin evolved in isolation from the Khazarian Rovas. Carpathian Basin Rovas was used up to the 11th/12th century and later became extinct. In 2009, the script was revitalized. In this procedure two new letters were created as ligatures for / \widehat{dz} / and / \widehat{dz} / (these phonemes did not exist during the historical use of the script). Their forms are frozen and turned into new letters similarly to the cases of the W<V+V and &<E+T. These characters are regarded as individual characters in the contemporary Carpathian Basin Rovas orthography.

The direction of Carpathian Basin Rovas is right-to-left. There is no casing in the known relics. However, due to the revitalization and the need for wide range daily use (digital communication, education and publication – including modern books and texts, etc.) casing is necessary.

²⁰ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA176>

²¹ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA48>

²² <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA106>

²³ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA34>

2.3. The Khazarian Rovas

The *Khazarian Rovas* is an extinct script (Vékony 1986) that was mainly used in the area of the Khazar Empire (from the 6th century to 965) by the different constituent nations and after the Settlement of Magyars (Hungarians) in the Carpathian Basin in the 10th century (Vásáry 2003; Erdélyi 2004:76). The known relics are mainly in *Turkic* including *Common Turkic* and *Ogur* as well as in *As-Alan* (Kyzlasov, I.L. 1994). The use of the Khazarian Rovas script for different languages led to the duplication of some Khazarian Rovas characters.²⁴ Khazarian Rovas is exclusively right-to-left; there is no casing in any of the known relics.²⁵

3. Fundamental decisions taken in the encoding process

3.1. Characters for the Szekely-Hungarian Rovas scripting

Basic characters

4 A, 4 AA, X B, ↑ C, 4 CS, + D, 4 DZ, 4 DZS, 4 E, 4 CLOSE E, 4 EE, 4 F, 4 G, 4 GY, 4 H, 4 I, 4 II, 4 J, 4 K, 4 OPEN K, 4 L, 4 LY, 4 M, 4 N, 4 NY, 4 O, 4 OO, 4 OE, 4 OEE, 4 P, 4 Q, 4 R, 4 S, 4 SZ, 4 T, 4 TY, 4 U, 4 UU, 4 CLOSE UE, 4 OPEN UE, 4 CLOSE UEE, 4 OPEN UEE, 4 V, 4 W, 4 X, 4 Y, 4 Z, 4 ZS

Reptile-like symbols

4 AMB, 4 AND, 4 ANT, 4 EMP, 4 ENC, 4 ENT, 4 TPRUS, 4 TPRU, 4 MB, 4 NAP, 4 NB, 4 UNK, 4 US

Historical characters

4 DIAGONAL F, 4 NGH, 4 CH, 4 SHARP K, 4 CIRCLE ENDED O, 4 OPEN OE, 4 SHORT R, 4 SCH, 4 OPEN V

The characters above are regarded as individual letters in the contemporary Szekely-Hungarian Rovas orthography. Historically, several basic characters developed as ligatures of other letters, but they became frozen forms and turned into new letters (see for details: N4055)²⁶. This development is identical to the cases of $W < V+V$ and $& < e+t$.

The term *reptile-like* originated from J. Telegdi (“*reptilium formas*” in Latin), who wrote the first Rovas textbook in 1598 (Thelegdi 1598).²⁷ Their sound values differ from the 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.

It is also necessary to encode some *historical characters*, which have since moved out of daily use to be able to reproduce them in historical and linguistic texts. These are not glyph variants of other characters, since their origins differ.

²⁴ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA42>

²⁵ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA144>

²⁶ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4055.pdf>

²⁷ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA215>

3.2. Characters for the Carpathian Basin Rovas scripting

Common with Szekely-Hungarian Rovas

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

Χ B, ↑ C, ⚡ CS, ↴ OPEN K, ⓪ LY, ∩ N, > OPEN OE, N GH, ⚡ P, | SZ, ↴ OPEN V, ⚡ SHARP K, Ψ ZS

Not common with Szekely-Hungarian Rovas

Υ FORKED A, Υ FORKED AA, > SHARP D, ⚡ SHARP DZ, Ψ SHARP DZS, ∩ DIAGONAL E, ∟ FORKED E, ↴ OPEN F, λ FORKED G, < SHORT G, ⚡ SHARP GY, ⚡ SHARP H, ⚡ SHARP CH, ↴ ANGLED I, ∠ CIRCLE ENDED I, ∩ CLOSE J, ⚡ KUE, Χ FORKED L, ∩ SIMPLE L, ∩ OPEN M, Υ NG, ∩ OPEN NY, ∩ OPEN O, ∩ OPEN OO, ↴ SIMPLE P, 8 ARCHED Q, ∩ CLOSE R, ⓪ CLOSE S, ∩ CLOSE T, Χ OPEN T, λ SHARP U, ⚡ FORKED U, ∩ ARCHED UE, ∩ ARCHED UEE, ∩ OPEN W, ∩ ARCHED I, ⚡ OPEN Z

3.3. Characters for the Khazarian Rovas scripting

Common with Szekely-Hungarian Rovas or the Carpathian Basin Rovas


The following characters are identical to the appropriate Szekely-Hungarian Rovas or the Carpathian Basin Rovas characters. Thus, there is no urge to encode them individually. Instead, it is proposed to use the appropriate Rovas **upper case letters** from the Szekely-Hungarian Rovas or the Carpathian Basin Rovas sub-groups.

Υ FORKED A, Χ B, > SHARP D, ∩ DIAGONAL E, ∟ FORKED E, ∩ CLOSE E, λ FORKED G, N GH, ⚡ SHARP CH, ↴ ANGLED I, ∩ ARCHED I, ∠ CIRCLE ENDED I, ∩ CLOSE J, ⚡ KUE, ∩ SIMPLE L, ∩ OPEN M, ∩ N, Υ NG, ⚡ P, ↴ SIMPLE P, 8 ARCHED Q, ∩ R, ∩ CLOSE R, Ψ ZS, | SZ, ∩ CLOSE T, Χ OPEN T, ∩ ARCHED UE, ↴ OPEN V

Not common with Szekely-Hungarian Rovas or the Carpathian Basin Rovas

∩ ANGLED B, ∩ ARCHED B, Ψ RAISED B, ⚡ TRIPLE CS, ∩ ARCHED D, λ FORKED D, ∩ ANGLED E, ∩ ARCHED E, φ CENTRAL F, ∩ CLOSE G, ' ' TRIPLE GH, ∩ ANGLED CH, ∩ ARCHED CH, ∩ FORKED CH, ∩ FORKED K, ∩ ARCHED L, Χ CROSSED L, ∩ FORKED L, ∩ LT, ∩ ROUND M, ∩ ANGLLED N, ∩ FORKED N, ∩ FORKED O, ∩ ANGLED Q, ∩ CLOSE Q, ∩ OPEN Q, ∩ ARCHED R, ∩ ARCHED SH, ∠ CIRCLE ENDED SH, Ψ SHL, ∩ FORKED SZ, ∩ ARCHED T, ∩ CENTRAL T, ∩ SHARP UE, ∩ CENTRAL Z

3.4. Specific Rovas punctuation mark

The KHAZARIAN ROVAS SEPARATOR LARGE  is script-specific and therefore belongs into the KHAZARIAN ROVAS block; it is used mostly at the end of the sentences.

3.5. Rovas numerals

I ONE, II TWO, III THREE, IIII FOUR, V FIVE, X TEN, V FIFTY, X ONE HUNDRED, V FIVE HUNDRED, X ONE THOUSAND

These numerals are applied by the Carpathian Basin Rovas as well. The Rovas numerals have only one version (there is no casing).


3.6. General punctuation marks

The contemporary Szekely-Hungarian Rovas and the Carpathian Basin Rovas orthographies apply the usual European punctuation marks and their reversed versions due to its bidirectional property. For this reason, the following missing punctuation marks have to be encoded.

Glyph	Name of the Rovas punctuation mark	Usage in texts	The Rovas scripts, in which the punctuation mark is used
◌̣	REVERSED COMMA	RTL used as in the modern European scripts	Szekely-Hungarian Rovas
◌̣◌̣	DOUBLE LOW-REVERSED-9 QUOTATION MARK	RTL as beginning quotation mark	Szekely-Hungarian Rovas
×	WORD SEPARATOR CROSS	LTR and RTL, as word separator	Szekely-Hungarian Rovas
◌̣◌̣	DOUBLE COMMA-LIKE HYPHEN	RTL as historical hyphen	Szekely-Hungarian Rovas
××	DOUBLE CROSS FULL STOP	LTR and RTL, as period	Szekely-Hungarian Rovas
⋮	BEGINNING MARK RIGHT	RTL	Szekely-Hungarian Rovas
⋮	BEGINNING MARK LEFT	LTR	Szekely-Hungarian Rovas
××	END OF MESSAGE MARK	LTR and RTL	Szekely-Hungarian Rovas
+	WORD SEPARATOR VERTICAL CROSS	RTL	Szekely-Hungarian Rovas, Carpathian Basin Rovas
┆	WORD SEPARATOR VERTICAL BAR	RTL	Carpathian Basin Rovas, Khazarian Rovas

The punctuation marks above seem to be generic enough to be included into the Supplemental Punctuation block. The WORD SEPARATOR VERTICAL BAR differs from the character-height sized HEBREW PUNCTUATION PASEQ' (U+05C0), since it is much shorter than the character height.

3.7. Diacritic marks and ligatures

Accents are not used in the Szekely-Hungarian Rovas. Long vowels are different characters; 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.

There is only one diacritic mark in Khazarian Rovas orthography, the COMBINING STOP ABOVE ◌̣. Its role is signaling the end of the word. For representing this, the PSALTER PAHLAVI COMBINING STOP ABOVE is usable.

Ligatures are widely used in the family of the Rovas scripts.²⁸ These are usually not systematic; they are applied on occasion mainly for space saving purposes. In the Khazarian Rovas sub-group there are two systematic ligatures, which are used regularly, similarly to the Arabic LAM-ALEF or the CH in Fraktur: 𐌆 DA /da/ < 𐌄 ARCHED D /d/ + 𐌅 A /a/ and 𐌇 DI /de/di/ed/ < 𐌄 ARCHED D /d/ + 𐌈 ANGLED I /i/e/. In modern computing, the ligatures belong to the presentation and not the character definition; they should be generated by improved digital typesetting techniques.

The comprehensive lists of the known Rovas diacritic marks and ligatures are presented in the book “Heritage of Scribes”.²⁹

3.8. 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

𐌆 A < 𐌆 AMB < 𐌆 AND < 𐌆 ANT < 𐌆 AA < 𐌆 B < 𐌆 C < 𐌆 CS < 𐌆 D < 𐌆 DZ < 𐌆 DZS < 𐌆 E < 𐌆 EMP < 𐌆 ENC < 𐌆 ENT < 𐌆 CLOSE E < 𐌆 EE < 𐌆 F < 𐌆 DIAGONAL F < 𐌆 G < 𐌆 NGH < 𐌆 GY < 𐌆 H < 𐌆 CH < 𐌆 I < 𐌆 II < 𐌆 J < 𐌆 K < 𐌆 SHARP K < 𐌆 OPEN K < 𐌆 L < 𐌆 LY < 𐌆 M < 𐌆 MB < 𐌆 N < 𐌆 NAP < 𐌆 TPRU < 𐌆 TPRUS < 𐌆 NB < 𐌆 NY < 𐌆 O < 𐌆 CIRCLE ENDED O < 𐌆 OO < 𐌆 OE < 𐌆 OPEN OE < 𐌆 OEE < 𐌆 P < 𐌆 Q < 𐌆 R < 𐌆 SHORT R < 𐌆 S < 𐌆 SCH < 𐌆 SZ < 𐌆 T < 𐌆 TY < 𐌆 U < 𐌆 UNK < 𐌆 US < 𐌆 UU < 𐌆 CLOSE UE < 𐌆 OPEN UE < 𐌆 CLOSE UEE < 𐌆 OPEN UEE < 𐌆 V < 𐌆 OPEN V < 𐌆 W < 𐌆 X < 𐌆 Y < 𐌆 Z < 𐌆 ZS

Carpathian Basin Rovas sub-group

𐌆 FORKED A < 𐌆 FORKED AA < 𐌆 B < 𐌆 C < 𐌆 CS < 𐌆 SHARP D < 𐌆 SHARP DZ < 𐌆 SHARP DZS < 𐌆 DIAGONAL E < 𐌆 FORKED E < 𐌆 OPEN F < 𐌆 FORKED G < 𐌆 SHORT G < 𐌆 SHARP GY < 𐌆 SHARP H < 𐌆 SHARP CH < 𐌆 ANGLED I < 𐌆 CIRCLE ENDED I < 𐌆 CLOSE J < 𐌆 OPEN K < 𐌆 KUE < 𐌆 FORKED L < 𐌆 SIMPLE L < 𐌆 LY < 𐌆 OPEN M < 𐌆 N < 𐌆 NG < 𐌆 OPEN NY < 𐌆 OPEN O < 𐌆 OPEN OO < 𐌆 OPEN OE < 𐌆 NGH < 𐌆 P < 𐌆 SIMPLE P < 𐌆 ARCHED Q < 𐌆 CLOSE R < 𐌆 CLOSE S < 𐌆 SZ < 𐌆 CLOSE T < 𐌆 OPEN T < 𐌆 SHARP U < 𐌆 FORKED U < 𐌆 ARCHED UE < 𐌆 ARCHED UEE < 𐌆 OPEN V < 𐌆 OPEN W < 𐌆 SHARP K < 𐌆 ARCHED I < 𐌆 OPEN Z < 𐌆 ZS

²⁸ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA184>, Section 8.1.8.

²⁹ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA1>

Khazarian Rovas sub-group

Y FORKED A < X B < > ANGLED B < U ARCHED B < Y RAISED B < N TRIPLE CS < O ARCHED D < A FORKED D < > SHARP D < M ANGLED E < > ARCHED E < > DIAGONAL E < Y FORKED E < X CLOSE E < phi CENTRAL F < D CLOSE G < s FORKED G < N GH < ' TRIPLE GH < J ANGLLED CH < O ARCHED CH < > FORKED CH < A SHARP CH < 1 ANGLED I < > ARCHED I < 1 CIRCLE ENDED I < D CLOSE J < > FORKED K < B KUE < Y ARCHED L < X CROSSED L < I FORKED L < > SIMPLE L < M LT < > OPEN M < O ROUND M < > N < 1 ANGLED N < Y FORKED N < Y NG < Y FORKED O < A P < 1 SIMPLE P < X ANGLED Q < 8 ARCHED Q < D CLOSE Q < C OPEN Q < H R < O ARCHED R < D CLOSE R < D ARCHED SH < 1 CIRCLE ENDED SH < Y ZS < Y SHL < I SZ < Y FORKED SZ < > ARCHED T < X CENTRAL T < D CLOSE T < X OPEN T < > ARCHED UE < M SHARP UE < 1 OPEN V < X CENTRAL Z

Rovas Numerals

I ONE < II TWO < III THREE < IIII FOUR < V FIVE < X TEN < V FIFTY < X ONE HUNDRED < V FIVE HUNDRED < X ONE THOUSAND

Level 2: This breaks ties on quasi-homographs (strings differ only because they have different diacritical marks). In the case of the Szekely-Hungarian Rovas there is only one diacritical mark, the called [◌] DUPLICATING MARK (1DC4 in UCS). 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 case of the Carpathian Basin Rovas sub-group there is no diacritical mark; however, it cannot be discounted that someone will use combining characters in entering the data (LaBonté 2010).

In the case of the Khazarian Rovas there is only one diacritical mark, the COMBINING STOP ABOVE ◌̆. However, it is not an accent, but a word separator. It has the same effect as writing – in other scripts – a space after the character, it is recommended to process this combining character itself as a space, i.e. assign it a Level 1 weight equivalent to that of the space, with also a Level 2 weight indicating it is not a space but something else (to distinguish with the case one enters a real space after the character). The basic characters should nevertheless have a Level 2 weight indicating a base character (for hypothetical cases where other combining characters are used; LaBonté 2010).

Level 3: This level breaks ties for quasi-homographs that differ only because uppercase and lowercase characters are used. In case of the Szekely-Hungarian Rovas and the Carpathian Basin Rovas orthographies all characters have uppercase and lowercase versions. In case of the Khazarian Rovas sub-group there is not casing; therefore this level is not required.

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.

4. Some examples of the Rovas scripting

4.1. The Szekely-Hungarian Rovas



Figure 4.1-1: Inscription from Vargyas (present-day Vârghiș, Szekelyland, Romania), a stone carving from the second half of the 12th century (Benkő, E. 1996:79).

Its meaning: /ⁱme: fioγ t^e n^ekyd/ '[Woman,] here is your Son', its transcription: ʏMϙ ʏNʏϙ ʏϙ (Vékony 2004a:22; Zelliger 2010-2011). It is a citation from the *Gospel of John* (Ioh. 19, 26). In the inscription, ʏ CIRCLE ENDED O /o/ shows the influence of the Glagolitic Ǿ ON /ɔ/. Oppositely, the more common Szekely-Hungarian Rovas ʏ O /o/ is a descendant of the Carpathian Basin Rovas ʏ OPEN O /o/.³⁰ The descent lines of the Szekely-Hungarian Rovas characters are presented in the so-called Rovas Atlas, which is a character-based catalogue of every Rovas letter and related other characters.³¹

³⁰ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA84>

³¹ <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA87>



Figure 4.1-4: Rovas inscription of the Patakfalvi Bible, between 1776 and 1785 (Tisza et al. 2009)

2. a) Írd le az alábbi szavak rovásírásos jelentését!

.HXX .HXLVYD VAXD, DY, OXMH, IOXZH, OOLVBE, HXLX, YBX, XO
 .HXX, YOX

3. a) Írd le az alábbi nevek rovásírásos jelentését!

.OBLA, RY, ICX, ICXA, LVHX, TX

Figure 4.1-5: Reptile-like symbols in the manuscript of the Rovas Scripting Textbook of D. Puskás (Puskás 2009).

7. A bogárjelek

☞	⊖	⊗	☞	☞	⊖	⊖	⊖	⊖	⊗	⊗
nap	us	trnu	tprus	emb	mb	ant	ent	and	amb	
				☞	⊗					
				emp	unk					

A bogárjelek, mint már ahogy észrevettétek nagyon érdekes jelek és nagyon régiek, amelyek különböző betűhalmazokat vagy szótagokat jelölnek. Eredetüket nem

Figure 4.1-6: Reptile-like symbols in the manuscript of the Rovas Scripting Textbook of D. Puskás (Puskás 2009).

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 nyelvallapotát 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 4.1-7: Using the reptile-like symbols ☞ NAP, ⊗ TPRU, & ☞ TPRUS in journal *Rovat* (Gribek, 2009).

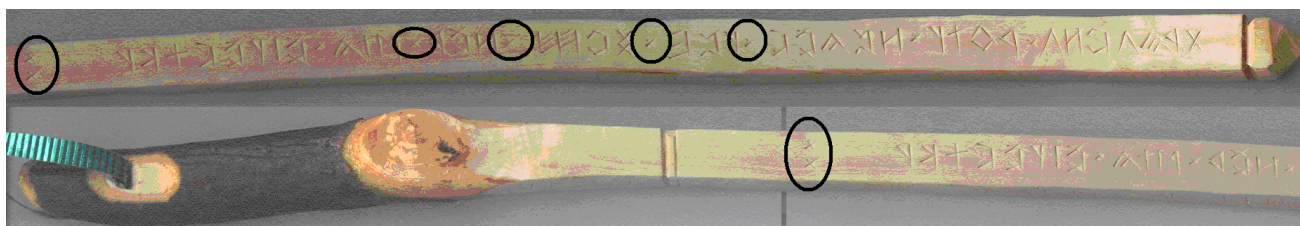
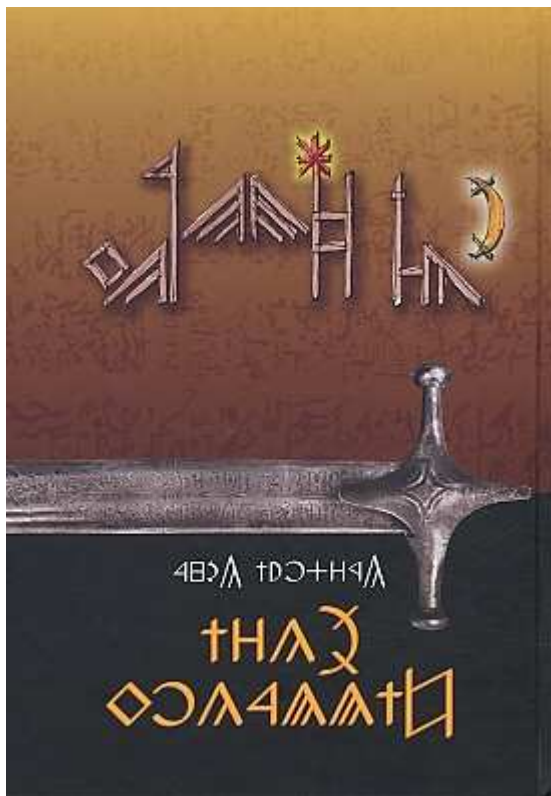


Figure 4.1-8: Two rows carved by Á. Zubrits in 2009. Note the consequent use of the * WORD SEPARATOR CROSS and the ☞ DOUBLE CROSS FULL STOP. These are widely used in the Rovas carving orthography of the Hungarian scouts in Western countries (Zubrits 2009-2010).

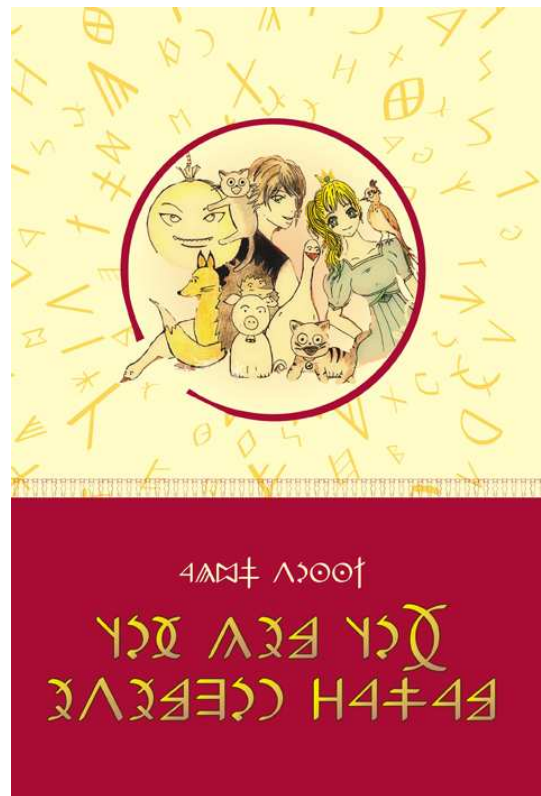
NIK. ABC.	MARSIGLI	TELEGDI
ent	nt	ant
tpius	—	tpru
emp	mb	amb

6. ábra. A „capita dictionum.“

Figure 4.1-9: Example of the reptile-like symbols in a book in the first half of the 20th century (Németh 1934).



a)



b)

Figure 4.1-10: 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)

4.2. The Carpathian Basin Rovas

ΧΗΙ Χ

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

The transcription of XHI X is /10 s̄iχ^{at}/, 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 /i/ and not /u/, 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 /u/.



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	Y _Y \ θ _Y IX
Written with normalized Carpathian Basin Rovas font without ligatures	Y _Y \ □-θ _Y IX
IPA phonetic transcription	/iŋɛ \ b ^a s y ^h ɲɪr'g/
Translation from Onogur	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. 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 (Vékony 1987b, Fig. 2). The transcription (Table 6.2.8-1) was originally made by G. Vékony and later modified by linguist E. Zelliger (Zelliger 2010-2011). The partly worn leftmost character was reconstructed by the archaeologist G. Vékony as ǰ M/m (Vékony 1987a).

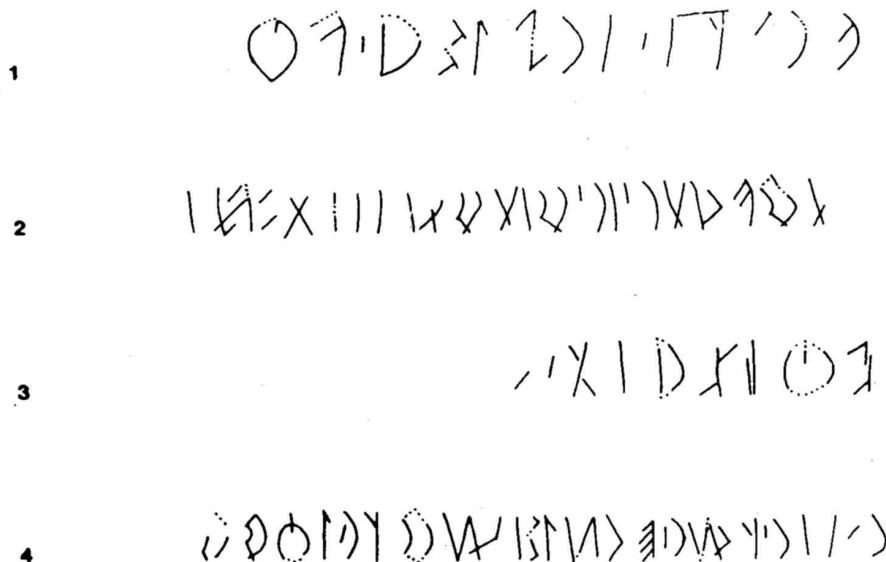


Figure 4.2-3: The bone Needle Case Rovas Inscription of Szarvas (Libisch 2004).

Written with normalized Carpathian Basin Rovas Font	<p style="text-align: center;"> 01. D 31 101. 0-07 01 1X 01 10 10. 01. 0W10 1 X1 D X. 101 [3]0001. 0Y 0W31 1N>1. 0WY. 0 0-0 </p>
IPA phonetic transcription	<p> /yng^yr : 'sn^εk im 'λ : β^aʃ^u [t]^lɣ t^εβ^εɔ^εɔ^εn : 's^εn : t^lɣ t^lɣ s^ur^β b^εk^β β^orɣ f^εʃ^εs : ε^lεⁱ s³l [...] y^{ng}y^r n^ε : aɔ^on : [ʒdɣ] im^εsɔ^εɔ^εt εn : iʃt^εn^ε[m]/ </p>
Translation from Hungarian	<p> '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!' </p>

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 + ʒ0>1 + 01>1 + >011 +
IPA phonetic transcription (Vékony 1997)	/βoʃ ^u d ^u w ^z β ^a ɲ w ^z a ^a t ⁿ i e ^γ e ⁱ /
Translation from Hungarian	'The fermented Woshudu [drink] for him to warm up.'

The beverage *woshudu* is known even nowadays mainly among the Turkic people as *boza*.³² As Vékony demonstrated, this word was internationally used and adopted by some languages. For instance, the inscription of the Novoчеркаск clay flask in Kypchak also contains this word written with Khazarian Rovas: ʏʏ1/boʃ^a/ (Vékony 2004a:250). The Preossetic (As-Alan) inscription of the Stanitsa Krivyanskoe clay flask contains the As-Alan word ʏʏ1/vofu/ written with Khazarian Rovas (Vékony 2004a:257). These inscriptions are presented in N4145³³. The

³² <http://mek.niif.hu/02700/02790/html/92.html>

³³ <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n4145.pdf>

> SHARP D /d/ in the term >011 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 >011 is /sü-s^yrⁱm/, its translation is ‘filtered water/cleaned water’ from Onogur. The transcription of 11 is /βⁱzⁱ/; its meaning is ‘water’ in Hungarian. Between the two inscriptions there is a symbol that can be presented with + WORD SEPARATOR VERTICAL BAR. The transcription of 1D>1 is /v^od^ojš/ ‘with water’ in Slavic. The fourth expression (1Y>) is in As or Alan language, its transcription is /dan^(u)/ ‘water’.

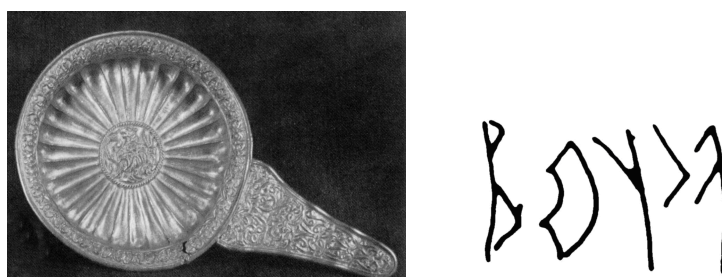


Figure 4.2-6: The photograph of the No. 15 flat-shallow ladle and its inscription from the 9th-10th centuries (László & Rácz 1977, Image 80; Hampel 1884, Fig. 11)

Written with normalized Carpathian Basin Rovas Font	B D Y > 1
IPA phonetic transcription	/β ^a d ^u et ^e ky/
Translation from Hungarian	‘forest food’ (=fruit)



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

The transcription of 1378 is /qimⁱs/, it is in Onogur (Vékony 2004a:138, 149). The transcription of N10 is /f^aβ^oγ/; it is in Hungarian (Vékony 2004a:138-139). The meaning of both inscriptions is ‘whey’.

kutatók. Leginkább az | = 1, ^ = 5, X = 10; az 50 és 100 jele variálódott.*

Y .0YD1Y.Y J3D0Y#D 0Y-V EY Y#EY1 30030 (33X-IXXVXXXXXX*) 3YX XXXX 3311Y 3Y0:3# D31D0YX
.XX Y 30:3 EY 0:3Y 3Y0:3# D31D0YX 3> .1333Y3# 3YV3X J33Y1 331Y33 3033303030 133Y10Y3#
Y .J3XV3D0Y3#D 03#D EY 303#331Y1 3Y0X13Y1 033 .03:3D Y 033 Y0:Y3#D0303Y13#D 3Y .3YX>Y3Y1
:0Y3#D Y 033#D 3Y1333# J3D0Y1Y3#
033Y 33Y13 033Y1#D J3D0Y3Y1 Y :Y13> V3Y1 03X 0030Y33# J331333#D 3033:3#D 0Y133Y1 .003#D.
.JY00Y#D0Y3#D Y 033333 33) .33 0>Y#D JY3313303Y1 Y XXV3#D3X 3Y0X 0Y:Y3Y1# XXY033Y3Y0:Y
0:3#D 3Y1333#D .1Y3330Y#D 3#Y133Y1 3Y3#D Y 33XV1Y3-3YXV3Y3 133#D 003#D Y
.130Y0X1 Y 33:33>333Y3Y1 Y 1Y0:Y3Y1 33X0Y3#D 0YV0030Y3#D3Y1 XXV3Y33# Y .3YX0Y3Y13Y1#D
".003>3Y3#D3Y1 333#D X 0Y V EY .10=X .5=V .1=13Y XXV1333#J

A fenti cikk Kárpát medencei rovással róva.

Figure 4.2-8: An article in the Rovas Info News Site written with Carpathian Basin Rovas, 2011.³⁴

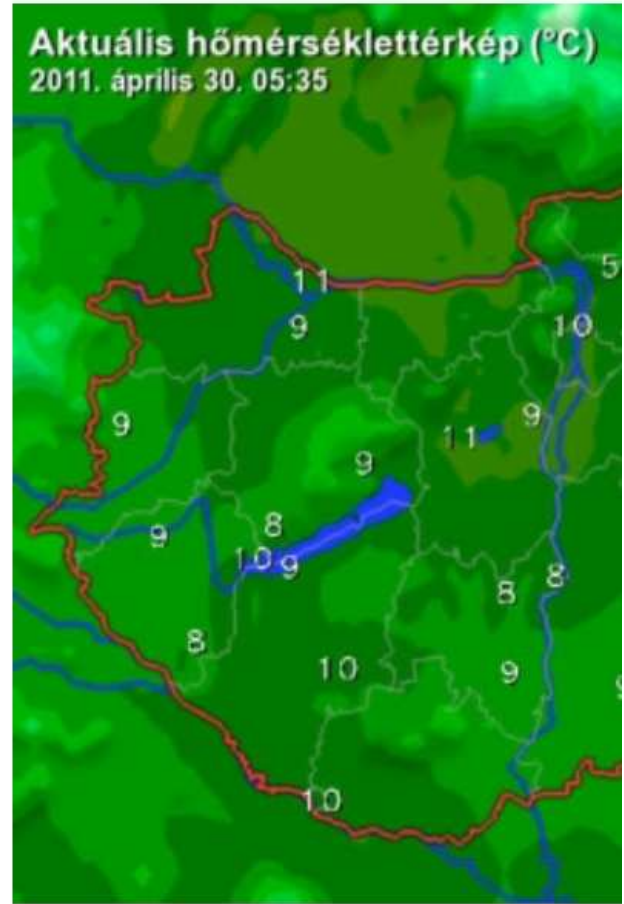


Figure 4.2-9: Design of the Carpathian Basin Rovas town sign of Jánoshida (Hungary) from 2011. Its manufacturing and installation is in progress (Rumi 2008–2011). The reason the designers T. Rumi and L. Sípos used the Carpathian Basin Rovas instead of the more common Szekely-Hungarian Rovas script is that a Carpathian Basin Rovas relic was found in its area, see Figure 2-4.

³⁴ Rovas Info, retrieved in 2011 from <http://rovas.info/index.php/hu/hirek/54-kiemelt-hirek/588-a-rovas-500-as-jele>

ND1 XXYZYL YB0.XY1

16:30:36 2011-04-29 :0.XZYL



•:XZYL0 XYXZL XY0XYV0Y3 •
IN0XY0Y 10YXZLXY1 Y ZYXLY0Y 100NXYZXY Y0M Y 0Y1Y1Y0Y
.XY 0Y 10Y ONXZLXYZLXY1 00X0Y3 .00N0Y 000XZL
fordulhat 00LY0Y0Y0Y0Y 10YXZLXY1 ,10YXZL Y ZYX0Y0N0XZL
XZLXY0Y 100XZL1LY0Y 0Y .0Y0Y10Y 000Y0 0YL-V0Y ,0Y0Y NXY
LY0Y0Y Y ZYXZL ,10Y 00Y0 000XZL0Y0Y V0Y ZLXY0Y XYL 000Y
Y .100Y0Y ZLXY0Y NXY fordulhatnak 00XY0Y0Y LY0Y0Y10Y
.00LY0Y 0Y0Y 10Y 12 0Y 8 0YLY0Y 10YXZLXY Y0M Y 00XLY00Y0Y

Figure 4.2-10: Weather forecast web page written with Carpathian Basin Rovas, transcribed by Giczi's software (Giczi, web site from 2010)



Figure 4.2-11: Design of the Carpathian Basin Rovas town sign of Szarvas (Hungary) from 2011, it was designed by architects T. Rumi & L. Sípos (Rumi 2008-2011).

101147421 Y 033 ,NE3301LY0 001>>34R4 >Y03X>030 5X5R3 0>103 0Y030030N43 3Y
 (2X1) .31 Y4R01V4Y 1Y0030-0Y4X1Y 001 23X-1277 .0X3 3032> 130YX>V4SY03
 Y V434 ,Y00-1 >>310 1Y3Y1 ,Y03Y3 10Y4>X 5X1YX >X1 .31 .00Y011 0YV4Y3 5X1YX
 .>X4 Y0Y0-1 10N 130YV4Y3



Figure 4.2-12: Part of an article in an on-line journal (Index.hu) transcribed to Carpathian Basin Rovas by G. Kliha' software (Kliha 2010-2011). The original article contained images of welcome messages with Szekely-Hungarian Rovas at the district border in Budapest. Since the textual part of the article was transcribed to Carpathian Basin Rovas, inscriptions with both Carpathian Basin Rovas and Szekely-Hungarian Rovas are shown in the Figure.

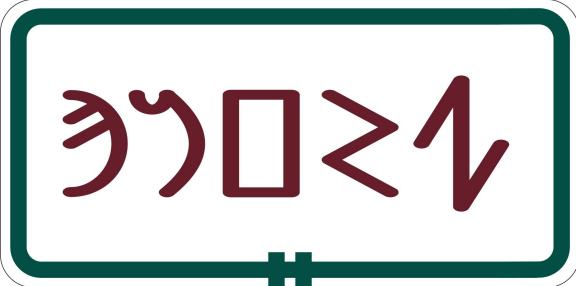


Figure 4.2-13: Design of the Carpathian Basin Rovas town sign of Környe (Hungary), designed by architects T. Rumi & L. Sípos in 2011 (Rumi 2008-2011).



Figure 4.2-14/a: Image made by Gergely Kliha in 2011. A web page (http://www.gyakorikerdesek.hu/kozoktatas-tanfolyamok_hazifeladat-kerdesek) was transcribed to Carpathian Basin Rovas by his own software (Kliha 2010-2011).

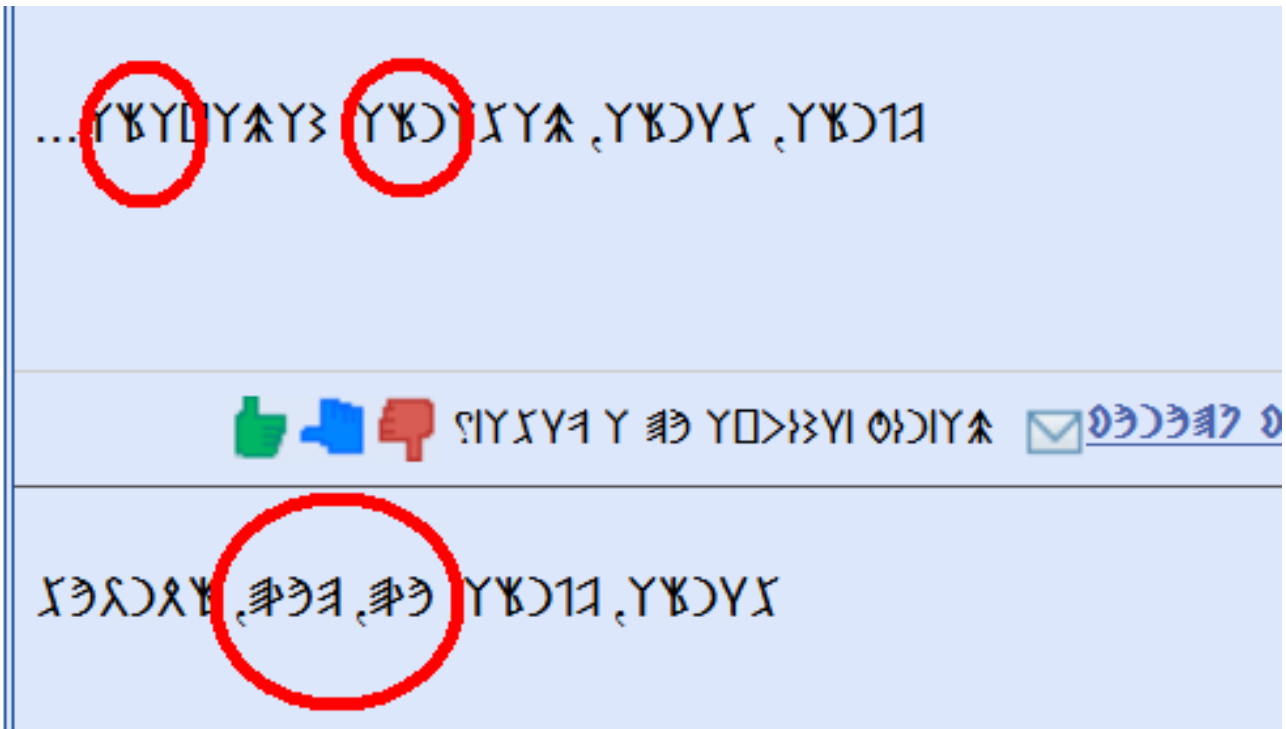


Figure 4.2-14/b: The zoomed part of the image in Fig. 4.2-14/a. Note the regular use of the Œ SHARP DZ / $\text{d}\bar{\text{z}}$ / and the Ÿ SHARP DZS / $\text{d}\bar{\text{z}}\tilde{\text{}}$ / Carpathian Basin Rovas characters.

4.3. The Khazarian Rovas

Khumara is an old Khazar fortress on the right hand side of the Kuban River. Two inscriptions are presented in Fig. 4.3-1 and 4.3-2.

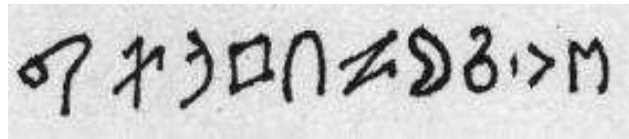


Figure 4.3-1: Drawing of the one-row inscription from Khumara (Vékony 1987:27).

Written with normalized Khazarian Rovas font	𐌆𐌆𐌆𐌆𐌆 𐌆𐌆𐌆 𐌆𐌆𐌆
IPA phonetic transcription	øð t ^e g'n d ^a ratī
Translation from Common Turkic (Khazar)	‘Öd Tegin made (it).’

The word 𐌆𐌆𐌆𐌆𐌆 /d^aratī/ is the ancestor of the Hungarian word *gyárt* /jɑ:rt/ ‘produce, make’. The *Öz* /øz/ is a well-known Turkic personal name (Nadeljaev et al. 1969:395). According to Vékony, the transition /z/ > /ð/ happened in Khazar. Therefore, *Öd* /øð/ was identical with *Öz* /øz/. The /*tegin*/ was a Khazar title (dignitary name). There is an example for this dignitary name in the sources: the name “*Er Tegin*” from the 680s (Golden 1980:186-187). In the Western Turkic Khaganate, the title *tegin* was also used, as it is attested to in inscriptions found in East Iran (Harmatta 1994:149-164). The word *tegin* survived as a personal name in the 10th century: a leader of the Magyars was called *Tétény* (Györffy 1998:135).

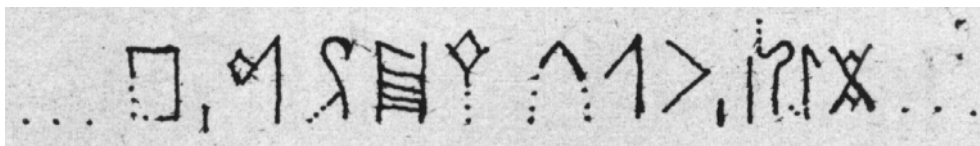


Figure 4.3-2: Drawing of a fragmentary inscription from Khumara Fortress. On this relic, the mirrored glyph variant 𐌆 of the N GH /ɣ/ was in use.

Written with normalized Khazarian Rovas Font	𐌆 𐌆𐌆𐌆𐌆𐌆 𐌆𐌆𐌆 𐌆𐌆𐌆
IPA phonetic transcription	t ^u ɣ ^a l ^a s, d̄z ^a pdi, b ^t ɣigi 'r
Translation from Ogur	Tughalas made (built), wrote its inscription.

The word /t^uɣ^al^as/ is an ethnic name according to Ibn Rustah (De Goeje 1892). The last word /^{*}ir/ is the Ogur version of the Common Turkic verb /yaz/ ‘draw’ (Vásáry 2010-2011). The evidence of the existence of the Ogur verb /^{*}ir/ is the Hungarian verb *ír* /i:r/ ‘write’ (Palló 1982:111-113). The verb /d̄z^apdi/ (< Proto-Turkic /yap/) means ‘built, did’, the KR > SHARP D is transcribed with /d̄z/, supposing that the inscription is in Ogur. The word /b^tɣig/ is the Ogur version of the Common Turkic /bitig/ (Róna-Tas 1992:12-13).

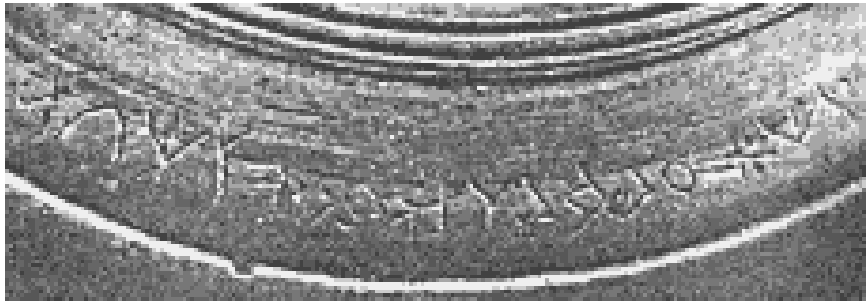


Figure 4.3-3: The Novocherkassk clay flask (9th-10th centuries, see Baichorov 1989: Table 113)



Figure 4.3-4: The drawing of the Novocherkassk inscription (Vékony 2004a:243; Vásáry 2010-2011). On this relic, the glyph variant *ʃ* of *ʃ* O /o/u/ was in use. The symbol *ʃ* is the ligature of *ʃ* FORKED E /ε/ and *ʃ* R /r/.

Written with normalized Khazarian Rovas Font	ʃOʃʃʃʃ.ʃOʃʃʃʃ.ʃʃ.ʃOʃʃʃʃ ʃ
IPA phonetic transcription	a ʃɛrm'ð b'ð ʃɛrm'ð boʃʳd'n
Translation from Kypchak	‘Oh. Let us drink. We drink from [this] boshā.’

The word *bosha* was the name of a fermented alcoholic drink; its current version is ‘*boza*’ in Hungarian and Turkic.³⁵

In 1962 Norman Golb discovered a non-Hebrew inscription on the bottom left corner of the Kievan Letter (Golb & Pristak 1982). According to Turkologist A. Róna-Tas, the Kievan Letter is from 955 to 961 due to historical reasons (Róna-Tas 2001:181). Fig. 4.3-5 shows the precise drawing copied directly from the photograph of the original text (Vékony 2004a:278).

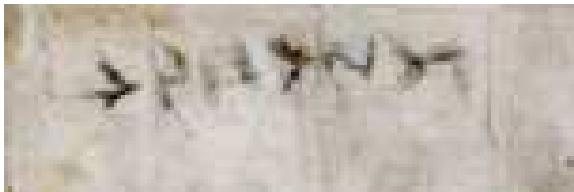


Figure 4.3-5. The photograph of the original Khazarian Rovas inscription on the Kievan Letter³⁶ and its drawing (Vékony 2004a:278).

Written with Khazarian Rovas font	ʃʃ ʃʃNYʃ
Written with normalized Khazarian Rovas font without ligatures	ʃʃʃʃʃʃNYʃ
IPA phonetic transcription	oɣ'ðiq il'ik
Translation from Khazar	We have read. Ilik.

³⁵ <http://mek.niif.hu/02700/02790/html/92.html>

³⁶ Wikimedia Commons, web site: *Okurum-Khazar.png*. Public Domain. Retrieved in 2011 from <http://commons.wikimedia.org/wiki/File:Okurum-Khazar.png>. A part of the image.

“Ilik” was the name of the vice-king in the Khazar Khaganate (Golden 1980:162, 184-185), who was in charge of the day-to-day operations (Golden 1984:474-486). This inscription most probably functioned as reconfirmation of the letter.

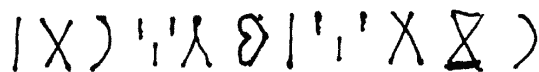


Figure 4.3-6: The drawing of the inscription on the bone-plate of a quiver from Homokmégy-Halom (Vékony 1992:42)

Written with normalized Khazarian Rovas font	X) 'l'λ θ 'l' X Δ)
IPA phonetic transcription	°n°ql'ɣ s ^a ɣd ^a ɣ'n b ^a s
Translation from Turkic	‘Triumph with [a] quiver of ten arrows.’

It was transcribed by the archaeologist G. Vékony and the transcription was improved by Turkologist I. Vásáry (Vékony 2004a:56-57; Vásáry 2010-2011). According to Vásáry, its text could be either in Common Turkic or Ogur.

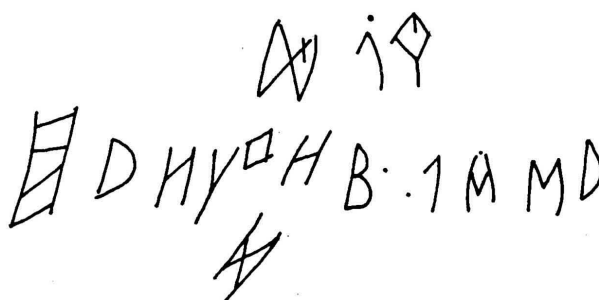


Figure 4.3-7: Photograph (Benkő 1972a:453 and Appendix; Benkő 1972b) and the drawing of the Alsószentmihályfalva (present-day Mihai Viteazul, Transylvania, Romania) inscription, 920-950 (Moravcsik 1984:85).

Written with normalized Khazarian Rovas Font	<i>First line:</i> ⚡ ⚡ <i>Second line:</i> ▣ DHY ▣ HB 1MMD
IPA phonetic transcription	<i>First line:</i> ^ε bi ^a tl'ɣ <i>Second line:</i> jyedi • kyr qar ^a j
Translation from Khazar	<i>First line:</i> ‘His mansion is famous.’ <i>Second line:</i> ‘Jüedi Kür (the) Karaite.’

In 1978, during the Soviet-Hungarian-Bulgarian common excavations of the Mayatskoe Gorodishche (‘Stone Castle of Mayatskoe’, other name: Mayaki citadel), S.A. Pletneva and G.E. Afanasyev found the longest known KR inscription (Erdélyi 2004:76). Fig. 4.3-8 shows the drawing of the architect B. Erdélyi, a participant in the excavation (Kyzlasov 1990:16).

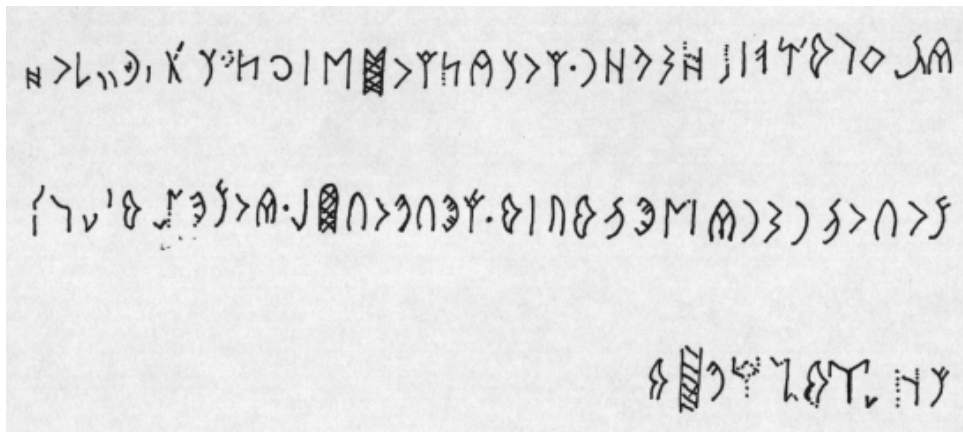


Figure 4.3-8: The drawing of the inscriptions of Mayatskoe Gorodishche reconstructed by archaeologist G. Vékony. On this relic, the glyph variants ʃ of ʃ O /o/u/ , ʒ of ʒ E /ε/ , and ʒ of ʒ UE /ø/y/ were in use.

The ends of the first and second rows may show characters of a different script; those were probably engraved later. The transcription of the texts is the following:

Written with normalized Khazarian Rovas Font	<p><i>First row:</i> ... $\text{ʃ}[\text{ɔ}] \text{H O I M} \text{█} > \text{ʃ H A ʃ} > \text{ʃ} \cdot \text{ɔ N} > \text{ʒ N} \text{ ʒ I} \text{ ʃ T} \text{ ʒ} > \text{ɔ} \text{ ʃ A}$</p> <p><i>Second row:</i> ... $\text{ʒ} \text{ ʒ} \text{ ʒ} \text{ ʃ A} \cdot \text{ʒ} \text{█} \text{ ʒ} > \text{ʒ} \text{ ʒ} \text{ ʒ} \text{ ʃ} \cdot \text{ʒ I} \text{ ʒ} \text{ ʒ} \text{ ʒ M} \text{ ʒ} \text{ ʒ} \text{ ʒ} \text{ ʒ} > \text{ʒ} > \text{ʒ} > \text{ʃ}$</p> <p><i>Third row:</i> $\text{ʒ} \text{█} \text{ ʒ} \text{ ʃ} \text{ ʒ} \text{ ʒ} \text{ ʃ N ʃ}$</p>
IPA phonetic transcription	<p><i>First row:</i> $\text{da nu}^{\text{a} \text{q}} \text{ }^{\text{ø} \text{x} \text{y}} \text{g s}^{\text{u} \text{β}} \text{ }^{\text{a} \text{s} \text{l}} \text{ }^{\text{ɛ} \text{t} \text{ʃ}} \text{m x}^{\text{a} \text{ɣ} \text{a} \text{n}} \text{b}^{\text{l} \text{x} \text{l}} \text{ }^{\text{d} \text{e} \text{r} \text{b} \text{l} \text{d}^{\text{ə}}}$ $\text{ }^{\text{a} \text{l} \text{t}^{\text{ə}}}$ $\text{ }^{\text{s} \text{a} \text{β} \text{l} \text{r} \text{i} \text{n} \text{ɟ}}$ [...]</p> <p><i>Second row:</i> $\text{u} \text{d}^{\text{d} \text{l} \text{d} \text{y}} \text{ }^{\text{o} \text{n}}$ $\text{m}^{\text{u} \text{n} \text{d} \text{a}}$ $\text{l} \text{t} \text{ɛ}$ $\text{y} \text{g}^{\text{y} \text{ʃ}}$ $\text{i}^{\text{s} \text{l} \text{g}}$ $\text{b} \text{e} \text{d} \text{i} \text{d}^{\text{ɛ} \text{d} \text{l} \text{o} \text{l}}$ $\text{d} \text{a} \text{d} \text{u}$ $\text{i} \text{n}^{\text{ɛ} \text{g}}$ [...]</p> <p><i>Third row:</i> $\text{o} \text{n}^{\text{a} \text{ɣ}}$ $\text{t}^{\text{e} \text{g} \text{l} \text{n}}$ $\text{ }^{\text{ɛ} \text{b} \text{i}}$ $\text{ }^{\text{ø} \text{g}}$</p>
Translation from Khazar	<p><i>First row:</i> ‘Don [River], white Ödüg River, As Country, [oh] my brother-khagan, our land of the Six-Savirs ...’</p> <p><i>Second row:</i> ‘Ud Didü On, here, in [this] country, ornamented several works. This inscription made by Ineg...’</p> <p><i>Third row:</i> ‘Mansion of Onagh Tegin. Extol it.’</p>

5. Unicode Character Properties

In the following the proposed naming and coding of the ROVAS block is listed. These charts contain only proposed assignments and should not be considered valid until such time as the Unicode Consortium formally accepts them and ISO/IEC JTC1/SC2 formally approves them after an international ballot.

5.1. 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	𐞀 1x000	𐞁 1x010	𐞂 1x020	𐞃 1x030	𐞄 1x040	𐞅 1x050	𐞆 1x060	𐞇 1x070	𐞈 1x080	𐞉 1x090
1	𐞊 1x001	𐞋 1x011	𐞌 1x021	𐞍 1x031	𐞎 1x041	𐞏 1x051	𐞐 1x061	𐞑 1x071	𐞒 1x081	𐞓 1x091
2	𐞔 1x002	𐞕 1x012	𐞖 1x022	𐞗 1x032	𐞘 1x042	𐞙 1x052	𐞚 1x062	𐞛 1x072	𐞜 1x082	𐞝 1x092
3	𐞟 1x003	𐞠 1x013	𐞡 1x023	𐞢 1x033	𐞣 1x043	𐞤 1x053	𐞥 1x063	𐞦 1x073	𐞧 1x083	𐞨 1x093
4	𐞪 1x004	𐞫 1x014	𐞬 1x024	𐞭 1x034	𐞮 1x044	𐞯 1x054	𐞰 1x064	𐞱 1x074	𐞲 1x084	𐞳 1x094
5	𐞵 1x005	𐞶 1x015	𐞷 1x025	𐞸 1x035	𐞹 1x045	𐞺 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;Lu;0;R;;;;N;;;;;
1x001;	ⒶⒶ	ROVAS CAPITAL LETTER AA;Lu;0;R;;;;N;;;;;
1x002;	Ⓑ	ROVAS CAPITAL LETTER B;Lu;0;R;;;;N;;;;;
1x003;	Ⓒ	ROVAS CAPITAL LETTER C;Lu;0;R;;;;N;;;;;
1x004;	ⒸⒶ	ROVAS CAPITAL LETTER CS;Lu;0;R;;;;N;;;;;
1x005;	Ⓓ	ROVAS CAPITAL LETTER D;Lu;0;R;;;;N;;;;;
1x006;	ⒹⒶ	ROVAS CAPITAL LETTER DZ;Lu;0;R;;;;N;;;;;
1x007;	ⒹⒶⒶ	ROVAS CAPITAL LETTER DZS;Lu;0;R;;;;N;;;;;
1x008;	Ⓔ	ROVAS CAPITAL LETTER E;Lu;0;R;;;;N;;;;;
1x009;	Ⓔ	ROVAS CAPITAL LETTER CLOSE E;Lu;0;R;;;;N;;;;;
1x00A;	ⒺⒺ	ROVAS CAPITAL LETTER EE;Lu;0;R;;;;N;;;;;
1x00B;	Ⓕ	ROVAS CAPITAL LETTER F;Lu;0;R;;;;N;;;;;
1x00C;	Ⓖ	ROVAS CAPITAL LETTER G;Lu;0;R;;;;N;;;;;
1x00D;	ⒼⒶ	ROVAS CAPITAL LETTER GY;Lu;0;R;;;;N;;;;;
1x00E;	ⒻⒶ	ROVAS CAPITAL LETTER H;Lu;0;R;;;;N;;;;;
1x00F;	Ⓖ	ROVAS CAPITAL LETTER I;Lu;0;R;;;;N;;;;;
1x010;	ⒼⒼ	ROVAS CAPITAL LETTER II;Lu;0;R;;;;N;;;;;
1x011;	Ⓙ	ROVAS CAPITAL LETTER J;Lu;0;R;;;;N;;;;;
1x012;	Ⓚ	ROVAS CAPITAL LETTER K;Lu;0;R;;;;N;;;;;
1x013;	Ⓚ	ROVAS CAPITAL LETTER OPEN K;Lu;0;R;;;;N;;;;;
1x014;	Ⓛ	ROVAS CAPITAL LETTER L;Lu;0;R;;;;N;;;;;
1x015;	ⓁⒶ	ROVAS CAPITAL LETTER LY;Lu;0;R;;;;N;;;;;
1x016;	Ⓜ	ROVAS CAPITAL LETTER M;Lu;0;R;;;;N;;;;;
1x017;	Ⓝ	ROVAS CAPITAL LETTER N;Lu;0;R;;;;N;;;;;
1x018;	Ⓝ	ROVAS CAPITAL LETTER NY;Lu;0;R;;;;N;;;;;
1x019;	Ⓞ	ROVAS CAPITAL LETTER O;Lu;0;R;;;;N;;;;;
1x01A;	ⓄⓄ	ROVAS CAPITAL LETTER OO;Lu;0;R;;;;N;;;;;
1x01B;	ⓄⒶ	ROVAS CAPITAL LETTER OE;Lu;0;R;;;;N;;;;;
1x01C;	ⓄⒶⒶ	ROVAS CAPITAL LETTER OEE;Lu;0;R;;;;N;;;;;
1x01D;	Ⓟ	ROVAS CAPITAL LETTER P;Lu;0;R;;;;N;;;;;
1x01E;	Ⓠ	ROVAS CAPITAL LETTER Q;Lu;0;R;;;;N;;;;;
1x01F;	Ⓡ	ROVAS CAPITAL LETTER R;Lu;0;R;;;;N;;;;;
1x020;	Ⓢ	ROVAS CAPITAL LETTER S;Lu;0;R;;;;N;;;;;
1x021;	Ⓢ	ROVAS CAPITAL LETTER SZ;Lu;0;R;;;;N;;;;;
1x022;	Ⓣ	ROVAS CAPITAL LETTER T;Lu;0;R;;;;N;;;;;
1x023;	ⓉⒶ	ROVAS CAPITAL LETTER TY;Lu;0;R;;;;N;;;;;
1x024;	Ⓤ	ROVAS CAPITAL LETTER U;Lu;0;R;;;;N;;;;;
1x025;	ⓊⓊ	ROVAS CAPITAL LETTER UU;Lu;0;R;;;;N;;;;;
1x026;	ⓊⒶ	ROVAS CAPITAL LETTER CLOSE UE;Lu;0;R;;;;N;;;;;
1x027;	ⓊⒶ	ROVAS CAPITAL LETTER OPEN UE;Lu;0;R;;;;N;;;;;
1x028;	ⓊⒶⒶ	ROVAS CAPITAL LETTER CLOSE UEE;Lu;0;R;;;;N;;;;;
1x029;	ⓊⒶⒶ	ROVAS CAPITAL LETTER OPEN UEE;Lu;0;R;;;;N;;;;;
1x02A;	Ⓡ	ROVAS CAPITAL LETTER V;Lu;0;R;;;;N;;;;;
1x02B;	Ⓡ	ROVAS CAPITAL LETTER W;Lu;0;R;;;;N;;;;;
1x02C;	Ⓡ	ROVAS CAPITAL LETTER X;Lu;0;R;;;;N;;;;;
1x02D;	Ⓢ	ROVAS CAPITAL LETTER Y;Lu;0;R;;;;N;;;;;
1x02E;	Ⓢ	ROVAS CAPITAL LETTER Z;Lu;0;R;;;;N;;;;;

1x02F; Ƴ ROVAS CAPITAL LETTER ZS;Lu;0;R;;;;N;;;;;
 1x030; Ʒ ROVAS CAPITAL LETTER AMB;Lu;0;R;;;;N;;;;;
 1x031; ƶ ROVAS CAPITAL LETTER AND;Lu;0;R;;;;N;;;;;
 1x032; Ƹ ROVAS CAPITAL LETTER ANT;Lu;0;R;;;;N;;;;;
 1x033; ƹ ROVAS CAPITAL LETTER EMP;Lu;0;R;;;;N;;;;;
 1x034; ƺ ROVAS CAPITAL LETTER ENT;Lu;0;R;;;;N;;;;;
 1x035; ƻ ROVAS CAPITAL LETTER TPRUS;Lu;0;R;;;;N;;;;;
 1x036; Ƽ ROVAS CAPITAL LETTER TPRU;Lu;0;R;;;;N;;;;;
 1x037; ƽ ROVAS CAPITAL LETTER MB;Lu;0;R;;;;N;;;;;
 1x038; ƿ ROVAS CAPITAL LETTER NAP;Lu;0;R;;;;N;;;;;
 1x039; ƾ ROVAS CAPITAL LETTER NB;Lu;0;R;;;;N;;;;;
 1x03A; ƿ ROVAS CAPITAL LETTER UNK;Lu;0;R;;;;N;;;;;
 1x03B; ƻ ROVAS CAPITAL LETTER US;Lu;0;R;;;;N;;;;;
 1x03C; Ƽ ROVAS CAPITAL LETTER ENC;Lu;0;R;;;;N;;;;;
 1x03D; ƽ ROVAS CAPITAL LETTER DIAGONAL F;Lu;0;R;;;;N;;;;;
 1x03E; ƶ ROVAS CAPITAL LETTER CH;Lu;0;R;;;;N;;;;;
 1x03F; Ʒ ROVAS CAPITAL LETTER GH;Lu;0;R;;;;N;;;;;
 1x040; Ƹ ROVAS CAPITAL LETTER SHARP K;Lu;0;R;;;;N;;;;;
 1x041; ƹ ROVAS CAPITAL LETTER CIRCLE ENDED O;Lu;0;R;;;;N;;;;;
 1x042; ƺ ROVAS CAPITAL LETTER OPEN OE;Lu;0;R;;;;N;;;;;
 1x043; ƻ ROVAS CAPITAL LETTER SHORT R;Lu;0;R;;;;N;;;;;
 1x044; Ƽ ROVAS CAPITAL LETTER SCH;Lu;0;R;;;;N;;;;;
 1x045; ƽ ROVAS CAPITAL LETTER OPEN V;Lu;0;R;;;;N;;;;;
 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; 4 ROVAS SMALL LETTER A;Ll;0;R;;;;N;;;;;
 1x051; 𐌶 ROVAS SMALL LETTER AA;Ll;0;R;;;;N;;;;;
 1x052; 𐌷 ROVAS SMALL LETTER B;Ll;0;R;;;;N;;;;;
 1x053; 𐌸 ROVAS SMALL LETTER C;Ll;0;R;;;;N;;;;;
 1x054; 𐌹 ROVAS SMALL LETTER CS;Ll;0;R;;;;N;;;;;
 1x055; 𐌺 ROVAS SMALL LETTER D;Ll;0;R;;;;N;;;;;
 1x056; 𐌻 ROVAS SMALL LETTER DZ;Ll;0;R;;;;N;;;;;
 1x057; 𐌼 ROVAS SMALL LETTER DZS;Ll;0;R;;;;N;;;;;
 1x058; 𐌽 ROVAS SMALL LETTER E;Ll;0;R;;;;N;;;;;
 1x059; 𐌾 ROVAS SMALL LETTER CLOSE E;Ll;0;R;;;;N;;;;;
 1x05A; 𐌿 ROVAS SMALL LETTER EE;Ll;0;R;;;;N;;;;;
 1x05B; 𐍀 ROVAS SMALL LETTER F;Ll;0;R;;;;N;;;;;
 1x05C; 𐍁 ROVAS SMALL LETTER G;Ll;0;R;;;;N;;;;;
 1x05D; 𐍂 ROVAS SMALL LETTER GY;Ll;0;R;;;;N;;;;;
 1x05E; 𐍃 ROVAS SMALL LETTER H;Ll;0;R;;;;N;;;;;
 1x05F; 𐍄 ROVAS SMALL LETTER I;Ll;0;R;;;;N;;;;;
 1x060; 𐍅 ROVAS SMALL LETTER II;Ll;0;R;;;;N;;;;;
 1x061; 𐍆 ROVAS SMALL LETTER J;Ll;0;R;;;;N;;;;;
 1x062; 𐍇 ROVAS SMALL LETTER K;Ll;0;R;;;;N;;;;;

1x063; ⚡ ROVAS SMALL LETTER OPEN K;Ll;0;R;;;;N;;;;;
1x064; ⚡ ROVAS SMALL LETTER L;Ll;0;R;;;;N;;;;;
1x065; ⓪ ROVAS SMALL LETTER LY;Ll;0;R;;;;N;;;;;
1x066; Ⓢ ROVAS SMALL LETTER M;Ll;0;R;;;;N;;;;;
1x067; Ⓣ ROVAS SMALL LETTER N;Ll;0;R;;;;N;;;;;
1x068; Ⓤ ROVAS SMALL LETTER NY;Ll;0;R;;;;N;;;;;
1x069; Ⓥ ROVAS SMALL LETTER O;Ll;0;R;;;;N;;;;;
1x06A; Ⓦ ROVAS SMALL LETTER OO;Ll;0;R;;;;N;;;;;
1x06B; ✕ ROVAS SMALL LETTER OE;Ll;0;R;;;;N;;;;;
1x06C; ✕ ROVAS SMALL LETTER OEE;Ll;0;R;;;;N;;;;;
1x06D; Ⓧ ROVAS SMALL LETTER P;Ll;0;R;;;;N;;;;;
1x06E; Ⓨ ROVAS SMALL LETTER Q;Ll;0;R;;;;N;;;;;
1x06F; Ⓩ ROVAS SMALL LETTER R;Ll;0;R;;;;N;;;;;
1x070; ⓐ ROVAS SMALL LETTER S;Ll;0;R;;;;N;;;;;
1x071; ⓑ ROVAS SMALL LETTER SZ;Ll;0;R;;;;N;;;;;
1x072; ⓓ ROVAS SMALL LETTER T;Ll;0;R;;;;N;;;;;
1x073; ✕ ROVAS SMALL LETTER TY;Ll;0;R;;;;N;;;;;
1x074; Ⓧ ROVAS SMALL LETTER U;Ll;0;R;;;;N;;;;;
1x075; Ⓨ ROVAS SMALL LETTER UU;Ll;0;R;;;;N;;;;;
1x076; Ⓩ ROVAS SMALL LETTER CLOSE UE;Ll;0;R;;;;N;;;;;
1x077; ⓐ ROVAS SMALL LETTER OPEN UE;Ll;0;R;;;;N;;;;;
1x078; ⓑ ROVAS SMALL LETTER CLOSE UEE;Ll;0;R;;;;N;;;;;
1x079; ⓓ ROVAS SMALL LETTER OPEN UEE;Ll;0;R;;;;N;;;;;
1x07A; Ⓨ ROVAS SMALL LETTER V;Ll;0;R;;;;N;;;;;
1x07B; Ⓩ ROVAS SMALL LETTER W;Ll;0;R;;;;N;;;;;
1x07C; ⓐ ROVAS SMALL LETTER X;Ll;0;R;;;;N;;;;;
1x07D; ⓑ ROVAS SMALL LETTER Y;Ll;0;R;;;;N;;;;;
1x07E; Ⓧ ROVAS SMALL LETTER Z;Ll;0;R;;;;N;;;;;
1x07F; Ⓨ ROVAS SMALL LETTER ZS;Ll;0;R;;;;N;;;;;
1x080; Ⓩ ROVAS SMALL LETTER AMB;Ll;0;R;;;;N;;;;;
1x081; ✕ ROVAS SMALL LETTER AND;Ll;0;R;;;;N;;;;;
1x082; ⓐ ROVAS SMALL LETTER ANT;Ll;0;R;;;;N;;;;;
1x083; ⓑ ROVAS SMALL LETTER EMP;Ll;0;R;;;;N;;;;;
1x084; ⓓ ROVAS SMALL LETTER ENT;Ll;0;R;;;;N;;;;;
1x085; Ⓧ ROVAS SMALL LETTER TPRUS;Ll;0;R;;;;N;;;;;
1x086; Ⓨ ROVAS SMALL LETTER TPRU;Ll;0;R;;;;N;;;;;
1x087; Ⓩ ROVAS SMALL LETTER MB;Ll;0;R;;;;N;;;;;
1x088; ⓐ ROVAS SMALL LETTER NAP;Ll;0;R;;;;N;;;;;
1x089; ⓑ ROVAS SMALL LETTER NB;Ll;0;R;;;;N;;;;;
1x08A; ✕ ROVAS SMALL LETTER UNK;Ll;0;R;;;;N;;;;;
1x08B; ⓐ ROVAS SMALL LETTER US;Ll;0;R;;;;N;;;;;
1x08C; ⓑ ROVAS SMALL LETTER ENC;Ll;0;R;;;;N;;;;;
1x08D; Ⓞ ROVAS SMALL LETTER DIAGONAL F;Ll;0;R;;;;N;;;;;
1x08E; ✕ ROVAS SMALL LETTER CH;Ll;0;R;;;;N;;;;;
1x08F; Ⓨ ROVAS SMALL LETTER GH;Ll;0;R;;;;N;;;;;
1x090; ⓐ ROVAS SMALL LETTER SHARP K;Ll;0;R;;;;N;;;;;
1x091; ⓑ ROVAS SMALL LETTER CIRCLE ENDED O;Ll;0;R;;;;N;;;;;
1x092; ⓓ ROVAS SMALL LETTER OPEN OE;Ll;0;R;;;;N;;;;;
1x093; Ⓩ ROVAS SMALL LETTER SHORT R;Ll;0;R;;;;N;;;;;
1x094; Ⓨ ROVAS SMALL LETTER SCH;Ll;0;R;;;;N;;;;;
1x095; ⓐ ROVAS SMALL LETTER OPEN V;Ll;0;R;;;;N;;;;;
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)

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




































1x0A0

ROVAS Characters

1x0FF

	1x0A	1x0B	1x0C	1x0D	1x0E	1x0F
0	Ÿ 1x0A0	Ɔ 1x0B0	ʒ 1x0C0	Ÿ 1x0D0	Ɔ 1x0E0	ʒ 1x0F0
1	Ÿ 1x0A1	Ɔ 1x0B1	ʒ 1x0C1	Ÿ 1x0D1	Ɔ 1x0E1	ʒ 1x0F1
2	Ÿ 1x0A2	Ɔ 1x0B2	ʒ 1x0C2	Ÿ 1x0D2	Ɔ 1x0E2	ʒ 1x0F2
3	Ÿ 1x0A3	Ɔ 1x0B3	ʒ 1x0C3	Ÿ 1x0D3	Ɔ 1x0E3	ʒ 1x0F3
4	Ÿ 1x0A4	Ɔ 1x0B4	ʒ 1x0C4	Ÿ 1x0D4	Ɔ 1x0E4	ʒ 1x0F4
5	Ÿ 1x0A5	Ɔ 1x0B5	1x0C5	Ÿ 1x0D5	Ɔ 1x0E5	1x0F5
6	Ÿ 1x0A6	Ɔ 1x0B6	1x0C6	Ÿ 1x0D6	Ɔ 1x0E6	1x0F6
7	Ÿ 1x0A7	Ɔ 1x0B7	1x0C7	Ÿ 1x0D7	Ɔ 1x0E7	1x0F7
8	Ÿ 1x0A8	Ɔ 1x0B8	1x0C8	Ÿ 1x0D8	Ɔ 1x0E8	1x0F8
9	Ÿ 1x0A9	Ɔ 1x0B9	1x0C9	Ÿ 1x0D9	Ɔ 1x0E9	1x0F9
A	Ÿ 1x0AA	Ɔ 1x0BA	1x0CA	Ÿ 1x0DA	Ɔ 1x0EA	1x0FA
B	Ÿ 1x0AB	Ɔ 1x0BB	1x0CB	Ÿ 1x0DB	Ɔ 1x0EB	1x0FB
C	Ÿ 1x0AC	Ɔ 1x0BC	1x0CC	Ÿ 1x0DC	Ɔ 1x0EC	1x0FC
D	Ÿ 1x0AD	Ɔ 1x0BD	1x0CD	Ÿ 1x0DD	Ɔ 1x0ED	1x0FD
E	Ÿ 1x0AE	Ɔ 1x0BE	1x0CE	Ÿ 1x0DE	Ɔ 1x0EE	1x0FE
F	Ÿ 1x0AF	Ɔ 1x0BF	1x0CF	Ÿ 1x0DF	Ɔ 1x0EF	1x0FF

UPPERCASE LETTERS

1x0A0;  ROVAS CAPITAL LETTER FORKED A;Lu;0;R;;;;;N;;;;;
1x0A1;  ROVAS CAPITAL LETTER FORKED AA;Lu;0;R;;;;;N;;;;;
1x0A2;  ROVAS CAPITAL LETTER SHARP D;Lu;0;R;;;;;N;;;;;
1x0A3;  ROVAS CAPITAL LETTER SHARP DZ;Lu;0;R;;;;;N;;;;;
1x0A4;  ROVAS CAPITAL LETTER SHARP DZS;Lu;0;R;;;;;N;;;;;
1x0A5;  ROVAS CAPITAL LETTER DIAGONAL E;Lu;0;R;;;;;N;;;;;
1x0A6;  ROVAS CAPITAL LETTER FORKED E;Lu;0;R;;;;;N;;;;;
1x0A7;  ROVAS CAPITAL LETTER OPEN F;Lu;0;R;;;;;N;;;;;
1x0A8;  ROVAS CAPITAL LETTER FORKED G;Lu;0;R;;;;;N;;;;;
1x0A9;  ROVAS CAPITAL LETTER SHORT G;Lu;0;R;;;;;N;;;;;
1x0AA;  ROVAS CAPITAL LETTER SHARP GY;Lu;0;R;;;;;N;;;;;
1x0AB;  ROVAS CAPITAL LETTER SHARP H;Lu;0;R;;;;;N;;;;;
1x0AC;  ROVAS CAPITAL LETTER SHARP CH;Lu;0;R;;;;;N;;;;;
1x0AD;  ROVAS CAPITAL LETTER ANGLED I;Lu;0;R;;;;;N;;;;;
1x0AE;  ROVAS CAPITAL LETTER CIRCLE ENDED I;Lu;0;R;;;;;N;;;;;
1x0AF;  ROVAS CAPITAL LETTER CLOSE J;Lu;0;R;;;;;N;;;;;
1x0B0;  ROVAS CAPITAL LETTER KUE;Lu;0;R;;;;;N;;;;;
1x0B1;  ROVAS CAPITAL LETTER FORKED L;Lu;0;R;;;;;N;;;;;
1x0B2;  ROVAS CAPITAL LETTER SIMPLE L;Lu;0;R;;;;;N;;;;;
1x0B3;  ROVAS CAPITAL LETTER OPEN M;Lu;0;R;;;;;N;;;;;
1x0B4;  ROVAS CAPITAL LETTER NG;Lu;0;R;;;;;N;;;;;
1x0B5;  ROVAS CAPITAL LETTER OPEN NY;Lu;0;R;;;;;N;;;;;
1x0B6;  ROVAS CAPITAL LETTER OPEN O;Lu;0;R;;;;;N;;;;;
1x0B7;  ROVAS CAPITAL LETTER OPEN OO;Lu;0;R;;;;;N;;;;;
1x0B8;  ROVAS CAPITAL LETTER SIMPLE P;Lu;0;R;;;;;N;;;;;
1x0B9;  ROVAS CAPITAL LETTER ARCHED Q;Lu;0;R;;;;;N;;;;;
1x0BA;  ROVAS CAPITAL LETTER CLOSE R;Lu;0;R;;;;;N;;;;;
1x0BB;  ROVAS CAPITAL LETTER CLOSE S;Lu;0;R;;;;;N;;;;;
1x0BC;  ROVAS CAPITAL LETTER CLOSE T;Lu;0;R;;;;;N;;;;;
1x0BD;  ROVAS CAPITAL LETTER OPEN T;Lu;0;R;;;;;N;;;;;
1x0BE;  ROVAS CAPITAL LETTER SHARP U;Lu;0;R;;;;;N;;;;;
1x0BF;  ROVAS CAPITAL LETTER FORKED U;Lu;0;R;;;;;N;;;;;
1x0C0;  ROVAS CAPITAL LETTER ARCHED UE;Lu;0;R;;;;;N;;;;;
1x0C1;  ROVAS CAPITAL LETTER ARCHED UEE;Lu;0;R;;;;;N;;;;;
1x0C2;  ROVAS CAPITAL LETTER OPEN W;Lu;0;R;;;;;N;;;;;
1x0C3;  ROVAS CAPITAL LETTER ARCHED I;Lu;0;R;;;;;N;;;;;
1x0C4;  ROVAS CAPITAL LETTER OPEN Z;Lu;0;R;;;;;N;;;;;
1x0C5; (This position shall not be used)
1x0C6; (This position shall not be used)
1x0C7; (This position shall not be used)
1x0C8; (This position shall not be used)
1x0C9; (This position shall not be used)
1x0CA; (This position shall not be used)

1x0CB; (This position shall not be used)
1x0CC; (This position shall not be used)
1x0CD; (This position shall not be used)
1x0CE; (This position shall not be used)
1x0CF; (This position shall not be used)

LOWERCASE LETTERS

1x0D0; Ʒ ROVAS SMALL LETTER FORKED A;Ll;0;R;;;;N;;;;;
1x0D1; Ʒ ROVAS SMALL LETTER FORKED AA;Ll;0;R;;;;N;;;;;
1x0D2; > ROVAS SMALL LETTER SHARP D;Ll;0;R;;;;N;;;;;
1x0D3; Ɔ ROVAS SMALL LETTER SHARP DZ;Ll;0;R;;;;N;;;;;
1x0D4; Ʒ ROVAS SMALL LETTER SHARP DZS;Ll;0;R;;;;N;;;;;
1x0D5; Ɔ ROVAS SMALL LETTER DIAGONAL E;Ll;0;R;;;;N;;;;;
1x0D6; Ʒ ROVAS SMALL LETTER FORKED E;Ll;0;R;;;;N;;;;;
1x0D7; Ɔ ROVAS SMALL LETTER OPEN F;Ll;0;R;;;;N;;;;;
1x0D8; Ɔ ROVAS SMALL LETTER FORKED G;Ll;0;R;;;;N;;;;;
1x0D9; / ROVAS SMALL LETTER SHORT G;Ll;0;R;;;;N;;;;;
1x0DA; Ɔ ROVAS SMALL LETTER SHARP GY;Ll;0;R;;;;N;;;;;
1x0DB; Ɔ ROVAS SMALL LETTER SHARP H;Ll;0;R;;;;N;;;;;
1x0DC; Ɔ ROVAS SMALL LETTER SHARP CH;Ll;0;R;;;;N;;;;;
1x0DD; 1 ROVAS SMALL LETTER ANGLED I;Ll;0;R;;;;N;;;;;
1x0DE; Ɔ ROVAS SMALL LETTER CIRCLE ENDED I;Ll;0;R;;;;N;;;;;
1x0DF; Ɔ ROVAS SMALL LETTER CLOSE J;Ll;0;R;;;;N;;;;;
1x0E0; Ɔ ROVAS SMALL LETTER KUE;Ll;0;R;;;;N;;;;;
1x0E1; Ɔ ROVAS SMALL LETTER FORKED L;Ll;0;R;;;;N;;;;;
1x0E2; Ɔ ROVAS SMALL LETTER SIMPLE L;Ll;0;R;;;;N;;;;;
1x0E3; Ɔ ROVAS SMALL LETTER OPEN M;Ll;0;R;;;;N;;;;;
1x0E4; Ɔ ROVAS SMALL LETTER NG;Ll;0;R;;;;N;;;;;
1x0E5; Ɔ ROVAS SMALL LETTER OPEN NY;Ll;0;R;;;;N;;;;;
1x0E6; Ɔ ROVAS SMALL LETTER OPEN O;Ll;0;R;;;;N;;;;;
1x0E7; Ɔ ROVAS SMALL LETTER OPEN OO;Ll;0;R;;;;N;;;;;
1x0E8; 1 ROVAS SMALL LETTER SIMPLE P;Ll;0;R;;;;N;;;;;
1x0E9; 8 ROVAS SMALL LETTER ARCHED Q;Ll;0;R;;;;N;;;;;
1x0EA; Ɔ ROVAS SMALL LETTER CLOSE R;Ll;0;R;;;;N;;;;;
1x0EB; Ɔ ROVAS SMALL LETTER CLOSE S;Ll;0;R;;;;N;;;;;
1x0EC; Ɔ ROVAS SMALL LETTER CLOSE T;Ll;0;R;;;;N;;;;;
1x0ED; Ɔ ROVAS SMALL LETTER OPEN T;Ll;0;R;;;;N;;;;;
1x0EE; Ɔ ROVAS SMALL LETTER SHARP U;Ll;0;R;;;;N;;;;;
1x0EF; Ɔ ROVAS SMALL LETTER FORKED U;Ll;0;R;;;;N;;;;;
1x0F0; 7 ROVAS SMALL LETTER ARCHED UE;Ll;0;R;;;;N;;;;;
1x0F1; Ɔ ROVAS SMALL LETTER ARCHED UEE;Ll;0;R;;;;N;;;;;
1x0F2; Ɔ ROVAS SMALL LETTER OPEN W;Ll;0;R;;;;N;;;;;
1x0F3; Ɔ ROVAS SMALL LETTER ARCHED I;Ll;0;R;;;;N;;;;;
1x0F4; Ɔ ROVAS SMALL LETTER OPEN Z;Ll;0;R;;;;N;;;;;
1x0F5; (This position shall not be used)
1x0F6; (This position shall not be used)
1x0F7; (This position shall not be used)
1x0F9; (This position shall not be used)
1x0FA; (This position shall not be used)
1x0FB; (This position shall not be used)
1x0FC; (This position shall not be used)
1x0FD; (This position shall not be used)
1x0FE; (This position shall not be used)
1x0FF; (This position shall not be used)

5.3. Code chart of the KHAZARIAN ROVAS sub-group of the ROVAS block in the SMP

1x100

ROVAS Characters


































1x12F

	1x10	1x11	1x12
0	⤵ 1x100	⋈ 1x110	⋈ 1x120
1	⊖ 1x101	↑ 1x111	Ⓜ 1x121
2	⤵ 1x102	Ⓜ 1x112	⋈ 1x122
3	Ⓜ 1x103	○ 1x113	Ⓜ 1x123
4	∩ 1x104	↯ 1x114	Ⓜ 1x124
5	∧ 1x105	⤵ 1x115	Ⓜ 1x125
6	Ⓜ 1x106	⤵ 1x116	Ⓜ 1x126
7	↯ 1x107	⋈ 1x117	Ⓜ 1x127
8	ϕ 1x108	◻ 1x118	Ⓜ 1x128
9	∂ 1x109	⊂ 1x119	Ⓜ 1x129
A	⋈ 1x10A	Ω 1x11A	Ⓜ 1x12A
B	∩ 1x10B	∩ 1x11B	Ⓜ 1x12B
C	∩ 1x10C	↯ 1x11C	Ⓜ 1x12C
D	⤵ 1x10D	⤵ 1x11D	Ⓜ 1x12D
E	⤵ 1x10E	⤵ 1x11E	Ⓜ 1x12E
F	⤵ 1x10F	∂ 1x11F	Ⓜ 1x12F

1x100; ⤵ ROVAS LETTER ANGLED B

1x101; ⊖ ROVAS LETTER ARCHED B

1x102; ⤵ ROVAS LETTER RAISED B

1x103;  ROVAS LETTER TRIPLE CS
 1x104;  ROVAS LETTER ARCHED D
 1x105;  ROVAS LETTER FORKED D
 1x106;  ROVAS LETTER ANGLED E
 1x107;  ROVAS LETTER ARCHED E
 1x108;  ROVAS LETTER CENTRAL F
 1x109;  ROVAS LETTER CLOSE G
 1x10A;  ROVAS LETTER TRIPLE GH
 1x10B;  ROVAS LETTER ANGLED CH
 1x10C;  ROVAS LETTER ARCHED CH
 1x10D;  ROVAS LETTER FORKED CH
 1x10E;  ROVAS LETTER FORKED K
 1x10F;  ROVAS LETTER ARCHED L
 1x110;  ROVAS LETTER CROSSED L
 1x111;  ROVAS LETTER FORKED L
 1x112;  ROVAS LETTER LT
 1x113;  ROVAS LETTER ROUND M
 1x114;  ROVAS LETTER ANGLED N
 1x115;  ROVAS LETTER FORKED N
 1x116;  ROVAS LETTER FORKED O
 1x117;  ROVAS LETTER ANGLED Q
 1x118;  ROVAS LETTER CLOSE Q
 1x119;  ROVAS LETTER OPEN Q
 1x11A;  ROVAS LETTER ARCHED R
 1x11B;  ROVAS LETTER ARCHED SH
 1x11C;  ROVAS LETTER CIRCLE ENDED SH
 1x11D;  ROVAS LETTER SHL
 1x11E;  ROVAS LETTER FORKED SZ
 1x11F;  ROVAS LETTER ARCHED T
 1x120;  ROVAS LETTER CENTRAL T
 1x121;  ROVAS LETTER SHARP UE
 1x122;  ROVAS LETTER CENTRAL Z
 1x123; (This position shall not be used)
 1x124; (This position shall not be used)
 1x125; (This position shall not be used)
 1x126; (This position shall not be used)
 1x127; (This position shall not be used)
 1x128; (This position shall not be used)
 1x129; (This position shall not be used)
 1x12A; (This position shall not be used)
 1x12B; (This position shall not be used)
 1x12C; (This position shall not be used)
 1x12D; (This position shall not be used)
 1x12E; (This position shall not be used)
 1x12F;  KHAZARIAN ROVAS SEPARATOR LARGE

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

1x130

ROVAS Characters

1x13F

	1x13
0	 1x130
1	 1x131
2	 1x132
3	 1x133
4	∇ 1x134
5	X 1x135
6	∇ 1x136
7	X 1x137
8	∇ 1x138
9	X 1x139
A	1x13A
B	1x13B
C	1x13C
D	1x13D
E	1x13E
F	1x13F

NUMBERS

- 1x130; | ROVAS NUMBER ONE;No;0;R;;;;;N;;;;;
- 1x131; || ROVAS NUMBER TWO;No;0;R;;;;;N;;;;;
- 1x132; ||| ROVAS NUMBER THREE;No;0;R;;;;;N;;;;;
- 1x133; |||| ROVAS NUMBER FOUR;No;0;R;;;;;N;;;;;
- 1x134; ∇ ROVAS NUMBER FIVE;No;0;R;;;;;N;;;;;
- 1x135; X ROVAS NUMBER TEN;No;0;R;;;;;N;;;;;
- 1x136; ∇ ROVAS NUMBER FIFTY;No;0;R;;;;;N;;;;;
- 1x137; X ROVAS NUMBER ONE HUNDRED;No;0;R;;;;;N;;;;;
- 1x138; ∇ ROVAS NUMBER FIVE HUNDRED;No;0;R;;;;;N;;;;;
- 1x139; X ROVAS NUMBER ONE THOUSAND;No;0;R;;;;;N;;;;;
- 1x13A; (This position shall not be used)
- 1x13B; (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)

5.5. Code chart of the PUNCTUATION SYMBOLS in Supplemental Punctuation block (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 script with right-to-left and boustrophedon directions
 - Used in Carpathian Basin Rovas script with right-to-left
- U+002C , comma
 → U+060C ﻛ , Arabic comma
- 2E42 ◌̥◌̥ DOUBLE LOW-REVERSED-9 QUOTATION MARK
- used in Szekely-Hungarian Rovas script with right-to-left and boustrophedon directions
 - used in Carpathian Basin Rovas script with right-to-left
- U+201E „ double low-9 quotation mark

2E43	*	WORD SEPARATOR CROSS
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script → U+00D7 × Multiplication sign
2E44	„	DOUBLE COMMA-LIKE HYPHEN
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script with right-to-left direction in historical Rovas relics → U+002C , comma → U+002D - hyphen-minus
2E45	⌘	DOUBLE CROSS FULL STOP
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script → U+003A : colon
2E46	⌚	BEGINNING MARK RIGHT
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script
2E47	⌛	BEGINNING MARK LEFT
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script
2E48	⌜	END OF MESSAGE MARK
		<ul style="list-style-type: none"> used in Szekely-Hungarian Rovas script
2E49	+	WORD SEPARATOR VERTICAL CROSS
		<ul style="list-style-type: none"> Used in historic Carpathian Basin Rovas inscriptions Used in historic Szekely-Hungarian Rovas inscriptions Usually uses full cap height → 002B Plus Sign
2E4A		WORD SEPARATOR VERTICAL BAR
		<ul style="list-style-type: none"> Used in historic Carpathian Basin Rovas inscriptions Used in historic Khazarian Rovas inscriptions → 05C0 Hebrew Punctuation Paseq

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7. Bibliography

- Baichorov, Soslanbek Ya. (1989): *Ancient Türkic runic monuments*, Stavropol, 1989, p. 67, p. 170-173
- Bálint, Csanád (2004): *A nagyszentmiklósi kincs* [Treasure of Nagyszentmiklós], Budapest: MTA Institute, 2004.
- Barabási, Enikő (2008): *Eredmények, kérdések és felvetések a bolognai rovásémlék vizsgálatában* [Results, questions and options in the research of the Bologna Rovas Relic]. Szamosújvár: Association of Hungarian Scouts of Romania, 2008.
- Benkő, Elek (1972a): Egy újabb rovásírási emlékek Erdélyből [A new Rovas script relic from Transylvania]. (A szentmihályfalvi templom rovásfelirata [The Rovas inscription of the Szentmihályfalva church]). *Magyar Nyelv* [Hungarian Language]. 1972, Vol. LXVIII, No. 4, pp. 453 and Appendix
- Benkő, Elek (1972b): Egy újabb rovásírási emlékek Erdélyből [A new Rovas script relic from Transylvania]. (A szentmihályfalvi templom rovásfelirata [The Rovas inscription of the Szentmihályfalva church]). *Utunk* [Our Way], Vol. XXVII, No. 1239, 28 July 1972.
- Benkő, Elek (1996): A székely rovásírás korai emlékei [The early relics of the Szekely Rovas script]. *Magyar Nyelv* [Hungarian Language], Vol. XCII, 1996, pp. 75–80.
- De Goeje, M. J. (ed.) (1892): Ibn Rustah: *Kitāb al-A'lāk an-Nafīsa*. Bibliotheca Geographorum Arabicorum [BGA], Leiden, E. J. Brill.
- E. Abaffy, Erzsébet (2003a): Hangtörténet. Az ősmagyar kor [Phoneme history. The Ancient Hungarian period]. In *Kiss & Pusztai (2003)*, pp. 106-128.
- E. Abaffy, Erzsébet (2003b): Hangtörténet. Az ómagyar kor [Phoneme history. The Old Hungarian period]. In *Kiss & Pusztai (2003)*, pp. 301-351.
- Erdélyi, István & Ráduly, János (2010): *A Kárpát-medence rovásfeliratos emlékei a Kr. u. 17. századig* [The relics of the Carpathian Basin with Rovas inscriptions up to the 17th century]. Ed. István Erdélyi. Budapest: Masszi Kiadó.
- Erdélyi, István (1958a): A jánoshidai avar kori temető [The Avar-aged cemetery of Jánoshida]. In: *Régészeti Füzetek* [Archaeological Notebooks] II/1. Budapest 1958.
- Erdélyi, István (1958b): Новая руническая надпись из Венгрии [New Rovas inscriptions from Hungary]. In: *Эпиграфика Востока* [Epigraphyka Vostoka], pp. 55-56
- Erdélyi, István (1961): Új magyarországi rovásfelirat [New Rovas inscription of Hungary]. In: *Archeológiai Értesítő* [Acheological Communications], pp. 279-280
- Erdélyi, István (1982): *Az avarság és Kelet a régészeti források tükrében* [The Avars and the East according to the archeological sources]. Budapest: Akadémiai Kiadó [Publisher of the Hungarian Academy of Sciences]. ISBN 963 05 2705 7.
- Erdélyi, István (2004): *Őseink nyomában* [Tracing our ancestors]. A magyar őstörténet kutatása a XX. században [Research of the Hungarian ancient history in the 20th century]. Publisher: Masszi Kiadó. Budapest, 2004, 218 p., ISBN 963 9454 46 X
- Giczi, György (web site from 2010): *Rovas Transcribe Site*. Retrieved in 2010 from <http://mutasdrovással.hu/KarpatMedencei.aspx>
- Golb, Norman & Pristak, Omeljan (1982): *Khazarian Hebrew Documents of the Tenth Century*. Cornell Univ. Press, Ithaca and London.
- Golden, Peter B. (1980): *Khazar Studies*. Budapest.
- Golden, Peter B. (1984): A New Discovery: Khazarian Hebrew Documents of the Tenth Century. Review Articles. In: *Harvard Ukrainian Studies*. Vol. VIII, No. 3-4, December 1984. Publisher: Ukrainian Research Institute, Harvard University, Cambridge, Massachusetts, pp. 474-486.
- Gribek, Dániel (2009): *Mik is azok a bogárjelek?* [What are that reptile-like symbols?]. *Rovat*. Retrieved in 2009 from <http://rovatmagazin.hu/hu/hirek/mik-azok-bogarjelek>
- Györffy, György (1998): *Magyarország történeti földrajza IV* [Historical geography of Hungary IV], Budapest: Akadémiai Kiadó
- Györffy, István & Harmatta, János (1996): Rovásírásunk az eurázsiai írásfejlődés tükrében [Our Rovas script in light of the Eurasian script evolution]. In Kovács László & Veszprémy László (ed.), *Honfoglalás és nyelvészet*, Balassi Kiadó, 1996. 145–162.

- Hampel, József (1884): A nagyszentmiklósi kincs. Tanulmány a népvándorláskori művészetről [Treasure of Nagyszentmiklós. Study about the Art of the Migration Period]. In: *Archeológiai Értesítő* [Archeological Communications], Vol. 4, pp. 1-166, 1-2
- Harmatta, János (1994): Nyugati Türk uralom Kelet-Iránban (Kr. u. 650-750) [Western Turkic rule in Eastern Iran (AD 650-750)]. In: *Antik Tanulmányok-Studia Antiqua*. Vol. XXXVIII, pp. 149-164
- Hosszú, Gábor (2010): *A székely jog megjelenése egy rovás emlékekben* [The occurrence of the Szekely Law in a Rovas relic], Diplomamunka [MSc. Thesis], Pázmány Péter Katolikus Egyetem, Jog- és Államtudományi Kar [Pázmány Péter Catholic University, Faculty of Law and Political Sciences], Budapest, 2010, 66 pages
- Hosszú, Gábor (2011): *Heritage of Scribes. The Relation of Rovas Scripts to Eurasian Writing Systems*. First edition. Budapest: Rovas Foundation, ISBN 978-963-88437-4-6, available from Google Books at <http://books.google.hu/books?id=TyK8azCqC34C&pg=PA1>
- Hosszú, Gábor; Rumi, Tamás & Sípos, László (2008): *Az élő rovás. Nemzeti írásunk a szabványosítás útján* [The Living Rovas. Our National Script on the Way to Standardization]. Proc. of Living Rovas Symposium, Gödöllő, October 4, 2008. Budapest: Imagent and WOU Hungary. ISBN: 978-963-87967-1-4.
- Kiss, Jenő & Puzsai, Ferenc (2003, ed.): *Magyar Nyelvtörténet* [Hungarian Language History], Budapest: Osiris Kiadó
- Kliha, Gergely (2010-2011): *Personal communication*
- Kyzlasov, I.L. (1990): *Runic inscriptions in the Mayaki citadel. – Mayaki archeological compound*. Moscow.
- Kyzlasov, I.L. (1994): *Writings of Eurasian Steppes*, Moscow, Eastern Literature.
- LaBonté, Alain (2007a): *ISO/IEC 14651:2007(E): Information technology -- International string ordering and comparison -- Method for comparing character strings and description of the common template tailorable ordering*
- LaBonté, Alain (2007b): *ISO/IEC 14651:2007(F): Technologies de l'information -- Classement international et comparaison de chaînes de caractères -- Méthode de comparaison de chaînes de caractères et description du modèle commun et adaptable d'ordre de classement*
- LaBonté, Alain (2010-2011): Standardization expert, Québec, Canada, *Personal communications*.
- László, Gyula & Rácz, István (1977): *A nagyszentmiklósi aranykincs* [Golden Treasure of Nagyszentmiklós], Budapest: Corvina Kiadó.
- Libisch, Győző (2004): *Rovás Kincsek. A Régi Magyar Írás Emléktára*. [Rovas Treasures. Archive of the Ancient Hungarian Writing]. Budapest: Két Kerék Alapítvány, First Edition. ISBN 693-217-169-1.
- Moravcsik, Gyula (ed., 1984): *Az Árpád-kori Magyar történet bizánci forrásai* [Byzantine sources of the Hungarian history in the Period of Árpáds]. Budapest, 1984.
- Nadeljaev, V.M. et al. (ed.) (1969): *Drevnjetjuerskij slovar*. Leningrad.
- Németh, Gyula (1932a): A nagyszentmiklósi kincs feliratai [The inscriptions of the Nagyszentmiklós treasure]. *Magyar Nyelv* [Hungarian Language]. Vol. XXVIII, No. 3-6, 1932, pp. 65-85 and 129-139.
- Németh, J. (1932b): *Die Inschriften des Schatzes von Nagy-Szent-Miklós von J. Németh*. Bibliotheca Orientalis Hungarica II, Mit Unterstützung der Ungarischen Akademie der Wissenschaften, Budapest: Kőrösi Csoma-Gesellschaft, Leipzig: Otto Harrassowitz, 1932.
- Németh, Gyula (1934), A magyar rovásírás [The Szekely-Hungarian Rovas Writing]. *A magyar nyelvtudomány kézikönyve* [Handbook of the Hungarian Linguistics] II. 2. Budapest.
- Puskás, Dávid (2009): *Rovásírás tankönyv* [Rovas scripting textbook], *under publication*.
- Róna-Tas, András (1992): A magyar írásbeliség török eredetéhez [About the Turkic origin of Hungarian literacy]. In: *Rovásírás a Kárpát-medencében* [Rovas scripting in the Carpathian Basin]. In: *Magyar Őstörténeti Könyvtár Könyvtár* [Library of the Hungarian Ancient History] 4. (ed. Klára Sándor), Szeged, 1992, pp. 9-14. ISBN 963 481 885 4
- Róna-Tas, András (1994): *Rovásírások, székely rovásírás* [Rovas scripts, Szekely Rovas script]. In *Korai magyar történeti lexikon (9–14. század)* [Encyclopedia of the Early Hungarian History (9th-14th century)], ed. Gyula Kristó, Budapest: Akadémiai Kiadó, 1994.
- Róna-Tas, András (1996): *A honfoglaló magyar nép. Bevezetés a korai magyar történelem ismeretébe* [The landtaking Hungarian nation. Introduction to the knowledge of the early Hungarian history]. Budapest: Balassi Kiadó, ISBN 963 506 106 4
- Róna-Tas, András (1999): *Magyarság és kereszténység a honfoglalás előtt* [Hungarians and Christianity before the Magyars' Landtaking], In: *Vigilia*, Vol. 64, November 1999, Budapest, László Lukács (Chief Ed.)
- Róna-Tas, András (2001): *Források a korai magyar történelem ismeretéhez* [Sources for the knowledge of the Hungarian history]. In series: *Magyar Őstörténeti Könyvtár* [Library of the Ancient Hungarian History], (Ser. ed.: István Zimonyi), Budapest: Balassi Kiadó.
- Rumi, Tamás & Sípos, László (2010): *Rovás alapismeretek* [Rovas Fundamentals]. Budapest: Imagent and WOU Hungary, ISBN: 978-963-88437-1-5
- Rumi, Tamás & Sípos, László (2011): *Rovásnapló 2012 és Rovás ABC oktatótábla* [Rovas Calendar 2012 and Rovas

- ABC educational panel]. Szolnok: Rovás Foundation
- Rumi, Tamás (2008-2009): *Personal communications*.
- Rumi, Tamás; Sípos, László & Somfai, Tamás (2009): *Gárdonyi Géza: Egri csillagok* [Géza Gárdonyi: Eclipse of the Crescent Moon]. Transcribed into Szekely-Hungarian Rovas by Tamás Rumi, László Sípos, & Tamás Somfai. Edited by Tamás Rumi. Published in 2009 by Imagent – WOU Hungary, ISBN: 978-963-06-7107-1.
- Rumi, Tamás; Sípos, László & Somfai, Tamás (2010): *Illyés Gyula: Hét meg hét magyar népmese* [Gyula Illyés: Seven Plus Seven Hungarian Folk Tales], transcribed to Szekely-Hungarian Rovas by Tamás Rumi, László Sípos, & Tamás Somfai. Published by Imagent and WOU Hungary, ISBN: 978-963-88437-0-8
- Sárosi, Zsófia (2003): Morfématörténet. Az ősmagyar kor [Morpheme history. The Ancient Hungarian period]. In: Kiss & Puztai (2003), pp. 129-172
- Sebestyén, Gyula (1909): *Rovás és rovásírás* [Rovas and Rovas writing], Budapest. Reprinted by Evilath Publishers, New York in 1969
- Sólyom, Ferenc (2009): *Personal communications partly through Tamás Rumi*.
- Thelegdi, Ioannis (1598): *Rudimenta, Priscaae hunnorum linguae brevibus quaestionibus ac responcionibus comprehensa opera et studio*, 1598. [The Elements of the Old Language of the Huns]
- Tisza, A. et al. (2009, web page): *A Patakfalvi Bibliában található rovásírás megfejtése* [Deciphering the Rovas inscription found in the Patakfalvi Bible], Retrieved in 2009 from <http://unitarius.eu/Patakfalvi-Biblia/index.htm>
- Vásáry, István (1974): *A magyar rovásírás. A kutatás története és mai helyzete*. [The Hungarian Rovas script. The history and the current state of research]. *Keletkutatás*, 1974, 159–171.
- Vásáry, István (2003): *A régi Belső-Ázsia története* [The history of the ancient Middle Asia]. Edited by: Ildikó Bende, the editor of the series: István Zimonyi. Budapest: Balassi Kiadó.
- Vásáry, István (2010-2011): Doctor of the Hungarian Academy of Sciences, Professor in the Department of Turkic Philology and Director of Oriental Studies Institute of the Eötvös Loránd University, *Personal communication*.
- Vékony, Gábor (1985): Késő népvándorláskori rovásfeliratok [Rovas inscriptions from the Late Migration Period]. *Életünk* Vol. XXII, No. 1, pp. 71-84.
- Vékony, Gábor (1986): Die Glagolica und osteuropäische Schriften in der späten Völkerwanderungszeit. (Hungaro-Bulgarica I.)
- Vékony, Gábor (1987a): *Későnépvándorláskori rovásfeliratok a Kárpát-medencében* [Rovas inscriptions from the Late Migration Period in the Carpathian Basin]. Szombathely-Budapest.
- Vékony, Gábor (1987b): Spätvölkerwanderungszeitliche Kerbinschriften im Karpatenbecken. *Acta Archeologica Hungarica* Vol. 39, pp. 211-256.
- Vékony, Gábor (1992): *Varázsszöveg a halomi honfoglalás kori temetőből*. [Magic text from the cemetery of Halom from the age of the Settlement of Hungary] In: *Rovásírás a Kárpát-medencében* [Rovas scripting in the Carpathian Basin]. *Magyar Őstörténeti Könyvtár Könyvtár* [Library of the Hungarian Ancient History] 4. (ed. Klára Sándor), Szeged, 1992. 41-49. o. ISBN 963 481 885 4
- Vékony, Gábor (1997): *Szkhithiától Hungáriáig: válogatott tanulmányok*. [From Scythia to Hungary: selected Studies] Szombathely Életünk Szerkesztőség: Magyar Írók Szövetsége. Nyugat-magyarországi Csoport.
- Vékony, Gábor (2002): *Magyar őstörténet – Magyar honfoglalás* [Hungarian Ancient History – Hungarian Settlement]. Budapest: Nap Kiadó. ISBN: 963 9402 16 8
- Vékony, Gábor (2004a): *A székely írás emlékei, kapcsolatai, története* [The relics, relations and history of the Szekely writing], Budapest: Nap Kiadó, ISBN 963 9402 45 1
- Vékony, Gábor (2004b): *Legacy*. Hungarian National Museum, Budapest.
- Zelliger, Erzsébet (2010-2011): Associate Professor in the Department of Hungarian Historical Linguistics, Sociolinguistics and Dialectology at the Eötvös Loránd University, *Personal communications*.
- Zubrits, Árpád (2009-2010): Rovas expert, Canada, *Personal communications*.

8. 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 10646³⁷**

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:	Proposal for encoding the Szekely-Hungarian Rovas, Carpathian Basin Rovas and Khazarian Rovas scripts into the Rovas block in the SMP of the UCS
2. Requester's name:	Hungarian Standards Institution
3. Requester type (Member body/Liaison/Individual contribution):	Member body
4. Submission date:	January 11, 2012
5. Requester's reference (if applicable):	http://www.mszt.hu/angol/index_eng.htm
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:	270
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) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
D-Attested extinct <input type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>
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. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?	Dr. Gábor Hosszú
If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:	
used:	Dr. Gábor Hosszú, FontCreator
6. References:	

³⁷ 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)

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?	<i>National Standardisation Technical Committee called Informatics (MSZT/MB 819) of the Hungarian Standards Institution Rovas Foundation More data are available in the following contributions: Szekely-Hungarian Rovas sub-group: Reference Section of N4007 (2011-05-21) Carpathian Basin Rovas sub-group: Reference Section of N4144 (2011-1012) Khazarian Rovas sub-group: Reference Section of N4145 (2011-10-12)</i>
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:	<i>Szekely-Hungarian Rovas sub-group: Contemporary use by Hungarians, in Hungary, the Carpathian Basin and world-wide. See more data in the Reference Section of N4007 (2011-05-21) Carpathian Basin Rovas sub-group: Historical use by mainly Hungarians in the Carpathian Basin and nowadays potential use by Hungarian Rovas writers. See more data in the Reference Section of N4144 (2011-1012) Khazarian Rovas sub-group: Scholars and researchers. See more data in the Reference Section of N4145 (2011-10-12)</i>
4. The context of use for the proposed characters (type of use; common or rare)	Common with increasing popularity
Reference:	<i>All characters form a complete system; Currently they are mostly used contemporary (except the characters that existed in the Khazarian Rovas, only). Increasing number of home pages use Szekely-Hungarian Rovas and Carpathian Basin Rovas.</i>
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference:	<i>In Hungary, in Romania (mainly in Szekelyland), in Slovakia, in Serbia, in Ukraine and in every place where Hungarians live. There are competitions of Szekler-Hungarian Rovas and Carpathian Basin Rovas users in Germany, in USA, in Canada among others. Scholars and researchers dealing with Szekely-Hungarian Rovas, Carpathian Basin Rovas, or Khazarian Rovas all over the</i>

<i>world.</i>	
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	<i>No</i>
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)?	<i>Yes</i>
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	<i>No</i>
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?	<i>No</i>
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?	<i>No</i>
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?	<i>No</i>
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?	<i>No</i>
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	<i>No</i>
If YES, describe in detail (include attachment if necessary)	

13. Does the proposal contain any Ideographic compatibility character(s)?	<i>No</i>
If YES, is the equivalent corresponding unified ideographic character(s) identified?	
If YES, reference:	