Universal Multiple-Octet Coded Character Set International Organization for Standardization Organisation Internationale de Normalisation

Международная организация по стандартизации

Doc Type: Working Group Document

Title: Revised proposal for encoding the Old Permic script in the SMP of the UCS

Source: UC Berkeley Script Encoding Initiative (Universal Scripts Project)

Authors: Michael Everson **Status:** Liaison Contribution

Action: For consideration by JTC1/SC2/WG2 and UTC

Replaces: N1687 (1998-01-18), N1947 (1999-01-29), N4177 (2012-01-24)

Date: 2012-04-26

1. Introduction.

The Old Permic script was devised in the 14th century by Russian missionary Stefan of Perm (fl. 1373–1395), and was used to write the Uralic languages Komi and Komi-Permyak. Its model was based on the Greek and Cyrillic alphabets (as can be seen from the order of the letters) but many of the glyphs were taken from the "Tamga signs", used in indigenous Komi religious practices; in this way Stefan made a link between traditional signs, which had much to do with the self-identity of the Komi, and Christian traditions. Stefan translated Russian and Greek liturgical and biblical texts into Komi. Missionary work notwithstanding, Stefan's remarkable contribution was in introducing the Komi mother-tongue into the liturgy and thereby creating a literary language for the Komi for the first time. Few of the medieval documents in the script are left to us today, chiefly in the form of icons, glosses, and monuments. In addition to writing Komi, the script was used cryptographically to write Russian, since it was unknown to most readers of Russian; this explains a number of the extensions made at the end of the alphabet. Cryptographic use of Old Permic dates to the 15th century. The script continued in use for Komi until the 17th century, and recently there has been some cultural interest in the script, including the creation by some designers using modern typographic letterforms.

- **2. Processing.** Old Permic is a simple, caseless, alphabetic script, read from left to right in horizontal lines running from top to bottom.
- 3. Combining characters. Several combining diacritics are attested in use in Old Permic. In the table, \Dota EF U+1036B and \not HA U+1036C are given with glyphs which are not the most commonly found ones. More common representation of the corresponding phonetic entities makes use of combining characters: \Dota is represented by U+1035F \Dota PEEI + " and \Dota is represented by U+103FA \Dota KOKE + ". Note the similarity of \Dota and \Dota to Greek \Dota and \Dota .

Other combining characters may be found with Old Permic characters are COMBINING DIAERESIS, COMBINING GRAVE ACCENT, COMBINING DOT ABOVE, COMBINING BREVE, COMBINING COMMA ABOVE, and COMBINING THREE DOTS ABOVE (this means that U+20DB can be used with letters; a note about this combining character should be added to the standard). The use of diacritical marks is peculiar in Old Permic. Sometimes it appears that the diacritic is semantically null, analogous to the use of a breve in German handwriting (especially the angular handwritten script Fraktur) over lower-case u to differentiate it from n (that is, where u is not really supposed to be u + breve and would not be so encoded in text). Sometimes, particularly in word-initial position, vowel quality or consonant palatalization may be

marked, apparently indifferently, by these diacritics, although the COMBINING GRAVE ACCENT is often used for this purpose. The COMBINING DIAERESIS is used sometimes to distinguish [i] and [j], but inconsistently, as some texts put the dots on the vowel, and others on the consonant.

Otherwise it appears that the diacritics used are the same ones used in Greek and Church Slavonic liturgical texts—they are conventional but not meaningful (it is notable that Lytkin does not generally transliterate the diacritics, though there are some exceptions of this, as when he shows titlo and the Greek smooth breathing mark over Russian words). It appears that there are no script-specific Komi diacritical marks, however. Characters like COMBINING CYRILLIC TITLO may be used, e.g. to indicate abbreviation (typically of a set of "holy" words). Note also that U+10372 $\stackrel{\checkmark}{\sim}$ OLD PERMIC LETTER IE is not a decomposable letter; it is not U+1035D $\stackrel{\checkmark}{\sim}$ OLD PERMIC LETTER NENOE with a breve.

- **3. Combining letters.** A small number of letters have been found used as superscript letters in abbreviations, in the same way that letters are used in Latin and Cyrillic. These are encoded at U+10376-U+1037A. See Figures 7 and 8.
- **4. Script name.** Stipa calls the script "Permisch"; Pillu uses the terms "vanapermi", "древнепермский", and "Old-Permian" in Estonian, Russian, and English respectively. Haarmann calls it "Abur" and "Altsyrjänisch" (= 'Old Komi'); "Abur" is a name derived from the names of the first two characters AN and BUR (so $z\sim-dr\nabla$ is equivalent to $\alpha\lambda\phi\alpha-\beta\eta\tau\alpha$ and $\alpha\beta-\delta\gamma\kappa\mu$). "Old Permic" is consistent with other script names in the UCS, as well as consistent with Pillu's terminology.
- **5. Character names.** The names used for the characters here are based on the names given in Lytkin 1952. The name SHCHOOI is not attested but has been modeled on SHOOI on the analogy of Russian SHA and SHCHA.
- **6. Numerals.** Script-specific numerals are not known. Letters of the alphabet can be marked with CYRILLIC COMBINING TITLO to indicate numeric use.
- **7. Punctuation.** In the manuscript spaces are used to separate words; a middle dot, a separating colon, and a sort of apostrophe can be seen. No script-specific punctuation is used in Old Permic.
- **8. Ordering.** Alphabetical ordering is a little bit erratic in the sources, especially toward the end of the alphabet. This proposal follows the order 1–34 given in Lytkin 1952, where 1–24 are primary letters and 25–34 are supplementary (see Figure 1 below). Four characters are considered to be subordinate in the order to another character. Thus Lytkin gives U+10365 $^{\prime}$ shool the value 22 and evidently U+10366 $^{\prime}$ Shchool is "22a"; similarly we have U+10367 $^{\prime}$ YRY "23" and U+10368 $^{\prime}$ YERU "23a", U+10369 $^{\prime}$ 0 "24" and U+1036A $^{\prime}$ 0 0 "24a", and U+10374 $^{\prime}$ YA "34" and U+10375 $^{\prime}$ IA "34a". These "subordinate" letters correspond to U+0449 III Shcha, U+044B bi YERU, U+0461 $^{\prime}$ 0 0 0 OMEGA, and U+0467 $^{\prime}$ LITTLE YUS. They should not be considered subordinate in ordering, however. The ordering of Old Permic letters is as in the code chart, with each letter having a primary weight.

9. Unicode Character Properties

```
10350;OLD PERMIC LETTER AN;Lo;0;L;;;;N;;;;
10351;OLD PERMIC LETTER BUR;Lo;0;L;;;;N;;;;
10352;OLD PERMIC LETTER GAI;Lo;0;L;;;;N;;;;
10353;OLD PERMIC LETTER DOI;Lo;0;L;;;;N;;;;
10354;OLD PERMIC LETTER E;Lo;0;L;;;;N;;;;
10355;OLD PERMIC LETTER ZHOI;Lo;0;L;;;;N;;;;
10356;OLD PERMIC LETTER DZHOI;Lo;0;L;;;;N;;;;
10357;OLD PERMIC LETTER ZATA;Lo;0;L;;;;N;;;;
10358;OLD PERMIC LETTER DZITA;Lo;0;L;;;;N;;;;
10359;OLD PERMIC LETTER I;Lo;0;L;;;;N;;;;
1035A;OLD PERMIC LETTER KOKE;Lo;0;L;;;;N;;;;
```

```
1035C;OLD PERMIC LETTER MENOE;Lo;0;L;;;;;N;;;;;
1035D; OLD PERMIC LETTER NENOE; Lo; 0; L;;;;; N;;;;;
1035E;OLD PERMIC LETTER VOOI;Lo;0;L;;;;;N;;;;
1035F;OLD PERMIC LETTER PEEI;Lo;0;L;;;;;N;;;;;
10360;OLD PERMIC LETTER REI;Lo;0;L;;;;;N;;;;;
10361;OLD PERMIC LETTER SII;Lo;0;L;;;;;N;;;;;
10362;OLD PERMIC LETTER TAI;Lo;0;L;;;;;N;;;;
10363; OLD PERMIC LETTER U; Lo; 0; L;;;;; N;;;;
10364; OLD PERMIC LETTER CHERY; Lo; 0; L;;;;; N;;;;;
10365; OLD PERMIC LETTER SHOOI; Lo; 0; L;;;;; N;;;;;
10366;OLD PERMIC LETTER SHCHOOI;Lo;0;L;;;;;N;;;;;
10367; OLD PERMIC LETTER YRY; Lo; 0; L;;;; N;;;;
10368;OLD PERMIC LETTER YERU;Lo;0;L;;;;;N;;;;;
10369;OLD PERMIC LETTER O;Lo;0;L;;;;;N;;;;;
1036A; OLD PERMIC LETTER OO; Lo; 0; L;;;;; N;;;;
1036B;OLD PERMIC LETTER EF;Lo;0;L;;;;;N;;;;
1036C;OLD PERMIC LETTER HA;Lo;0;L;;;;;N;;;;;
1036D;OLD PERMIC LETTER TSIU;Lo;0;L;;;;;N;;;;
1036E;OLD PERMIC LETTER VER;Lo;0;L;;;;;N;;;;
1036F; OLD PERMIC LETTER YER; Lo; 0; L;;;;; N;;;;;
10370; OLD PERMIC LETTER YERI; Lo; 0; L;;;;; N;;;;;
10371; OLD PERMIC LETTER YAT; Lo; 0; L;;;;; N;;;;
10372; OLD PERMIC LETTER IE; Lo; 0; L;;;;; N;;;;;
10373; OLD PERMIC LETTER YU; Lo; 0; L;;;;; N;;;;
10374; OLD PERMIC LETTER YA; Lo; 0; L;;;;; N;;;;;
10375; OLD PERMIC LETTER IA; Lo; 0; L;;;;; N;;;;;
10376; COMBINING OLD PERMIC LETTER AN; Mn; 230; NSM;;;;;; N;;;;
10377; COMBINING OLD PERMIC LETTER DOI; Mn; 230; NSM;;;;; N;;;;
10378; COMBINING OLD PERMIC LETTER ZATA; Mn; 230; NSM;;;;; N;;;;
10379; COMBINING OLD PERMIC LETTER NENOE; Mn; 230; NSM;;;;;N;;;;
1037A; COMBINING OLD PERMIC LETTER SII; Mn; 230; NSM;;;;; N;;;;
```

9. Bibliography

- (Èpifanij Premudaryj) Эпифаний Премудрый. 1862. "Повесть о Степане, эпископе Пермском", in *Памятники старинной русской литературы* 4: 119-71. С. Петербург.
- Haarmann, Harald. 1990. *Universalgeschichte der Schrift*. Frankfurt/Main; New York: Campus. ISBN 3-593-34346-0
- Hämäläinen, A. 1909. "Èpifanij Viisan tiedot Pyhästä Tapanista ja syrjääneistä", in *Suomi* 4,6,2: 1-27. (Тr. of Эпифаний Премудры. 1862.)
- (Kuznecova) Кузнецова, З. И. 1958. "Обзор памятников коми письменности XVIII в.", in *Историко-филологический сборник* 4: 213-41. Сыктывкар.
- Lepechin, I. I. 1790. "Histoire de l'Académie Imperiale des Sciences année MDCCLXXXVIII [1787]", in *Nova Acta Acadamiae Scientiarum Imperiales Petropolitanae* 6: 1-34. Petropoli.
- (Lytkin) Лыткин, В. И. 1952. Древнепермский язык: чтение текстов, грамматика, словарь. Москва.
- (Lytkin) Лыткин, В. И. 1957. *Историческая грамматика коми языка*. 1: Введение. Фонетика. Сыктывкар.
- Lytkin, V. I. 1962. "Über die Geschichte der syrjänischen Literatur", in *Ural-Altäische Jahrbücher* 34: 214-22.
- (Lytkin) Лыткин, Г. С. 1889. Зырянский Край при эпископах пермских и зырянский язык. Санктпетербург.
- Pillu, Kaljo. 1990. *Tallinna Kunstiülikooli kümme soome-ugri uurimisreisi*. Tallinn: Olion. ISBN 5-450-00582-2
- (Sidorov) Сидоров, А. С. 1962. "Новые памятники древнекоми письменности". Ed. В. И. Лыткин. In *Вопросы* 1962: 178-211.
- Stipa, Günter Johannes. 1961. "Der Ursprung der permischen Schrift", in Zeitschrift der Deutschen Morgenländischen Gesellschaft 110: 342-64. Wiesbaden.
- Stipa, Günter Johannes. 1963. "Der Ursprung der permischen Schrift", in *Congressus internationalis Fenno-ugristarum Budapestini habitus* 20-24. Pp. 281-87. Budapest.
- Stipa, Günter Johannes. 1990. Finnisch-ugrische Sprachforschung von der Renaissance bis zum Neupositivismus. (Mémoires de la Société Finno-ougrienne; 206) Helsinki: Suomalais-ugrilainen Seura. ISBN 951-9403-35-3

10. Acknowledgements. This project was made possible in part by a grant from the U.S. National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at UC Berkeley) in respect of the Old Permic encoding. Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment for the Humanities.

	1035	1036	1037
0	7	10360	10370
1	10351	C	T
2	T 10352	10362	10372
3	10353	10363	10373
4	10354	<u>)</u>	10374
5	10355	10365	10375
6	10356	10366	7 0 10376
7	1	10367	ر ا ا
8	10358	10368	10378
9	7	10369	10379
Α	1035A	1036A	1037A
В	1035A	1036B	
С	1035D	1036C	
D	~		
E	1035D	1036D	
F	1035E	1036E	
	1035F	1036F	VIIIII

Letters

10350 7 OLD PERMIC LETTER AN 10351 OLD PERMIC LETTER BUR 10352 т OLD PERMIC LETTER GAI 10353 A OLD PERMIC LETTER DOI 10354 OLD PERMIC LETTER E 10355 M OLD PERMIC LETTER ZHOI 10356

OLD PERMIC LETTER DZHOI 10357 11 OLD PERMIC LETTER ZATA 10358 l OLD PERMIC LETTER DZITA 10359 OLD PERMIC LETTER I 1035A OLD PERMIC LETTER KOKE 1035B OLD PERMIC LETTER LEI 1035C OLD PERMIC LETTER MENOE 1035D OLD PERMIC LETTER NENOE 1035E OLD PERMIC LETTER VOOI 1035F OLD PERMIC LETTER PEEI 10360 ∇ OLD PERMIC LETTER REI 10361 ۲. OLD PERMIC LETTER SII 10362 T OLD PERMIC LETTER TAI 10363 OLD PERMIC LETTER U 10364 OLD PERMIC LETTER CHERY
OLD PERMIC LETTER SHOOI OLD PERMIC LETTER CHERY 10365 10366 W OLD PERMIC LETTER SHCHOOI 10367 OLD PERMIC LETTER YRY Z 10368 IN OLD PERMIC LETTER YERU 10369 OLD PERMIC LETTER O 1036A ω OLD PERMIC LETTER OO 1036B 🌣 OLD PERMIC LETTER EF 1036C / OLD PERMIC LETTER HA 1036D OLD PERMIC LETTER TSIU 1 1036E OLD PERMIC LETTER VER X 1036F OLD PERMIC LETTER YER 10370 OLD PERMIC LETTER YERI 10371 T OLD PERMIC LETTER YAT 10372 $\check{\sim}$ OLD PERMIC LETTER IE 10373 m OLD PERMIC LETTER YU 10374 71. OLD PERMIC LETTER YA 10375 ♥ OLD PERMIC LETTER IA

Combining letters

Date: 2012-04-26

10376 COMBINING OLD PERMIC LETTER AN
10377 COMBINING OLD PERMIC LETTER DOI
10378 COMBINING OLD PERMIC LETTER ZATA
10379 COMBINING OLD PERMIC LETTER NENOE
1037A COMBINING OLD PERMIC LETTER SII

10. Figures.

6yk6h	оужом Дополнит.	Наэвания - букв	дуйд эпнэл <i>оне</i> Эондонэд	XY 0. Haðnuch Ha Tp. no cnucky Ch0.	XV в. Надп. на Сош. по сп. Полян.	нач. XV 8. Мин.	1 # nos. XV 8. 357	XY в. Церк.	XV 8. (14852) 597		5uon 90. XVO.	XY 8. Amga	. 1	. XY-XYI 88. ОЛДП	Hav. XVI B. Man.	TT-XT 00. 4n.		XVI 8. (1510 z.) Homokanon		
2 1/2	140	340.		наді		W = 1	.,			Pud	ĺ	φονοφ.	55,74,11	Hox	-127	Кылд.	A36.	Choeu		
1		ан	a	7717251	27T	1	2	333234 32 <i>5</i>	22 i	222		2 2		ፓ ፒ ጊ ፐ ተ		<u> </u>	715	ì		
2		бур	6	ФФ	ቀ ቀቀ	ಹಿಹಿಥ	1	0 4 6	cb	φω		9 4		a	ø		[,,,		1	
3		<i>ล</i> สมั	г	ዋዋጥ ዋ	ተዋ ዋ	ዋ	1	rrar	9	198679		7		7 T T				d q	ф Г	
4		<i>дой</i>	8	ለአላ	444	4	1	244244	′		••	_			٨			1	5	
5		Э	а	1444	111	777	Y	Krrrrr	vrr	rourtrrp	K	LV		vv			11	,	ļ"	
6		жой	ж	m	T	mm		 m ¶1		πm		m					ľ	m	m	
7		300	ž	ш														D)	p	
8		зата	3	D				i ÖÖ	ä	1,000	þ	,		п	i b	Ţ.	П	0	a	
9		зита	3'	111									ۃ					,	,	
10		8	น,บั	רור	7777	77	ï'	77741dP7	วัรจัว	777777	۲		7	7711	7	77	7	1	ĺ	
11		koks	H	444	441			 ታኅና 41	644	454		Κ ('		444	ļ .	_	
12		ภเวบั	n	といいひと	286	b		Yrk	lvi	rvrys			14	rur			ULF	1	V	
13		мәнё	M	V 40 10 10	พพพ	44		44447	4	ما مرم م		4		m			~ W W	J	4	
14		нэно	#	VVVV	r	~		rryrurr	227	4 x x x x v x		77			10		vvv	~	~	
15		BÔŬ	ô	FFK	thi					**				rittet				F		
6		ทริบั	"	545	44(1	4		~ ~ ~	44	4344			33	4455			4	١,	5	
17		рзй	p	0 0 4 4	777		7	6443	9 4	40048	8	r 4		VY	VV	•	4	4	V	
18		СЦЙ	C	COUR .	1116		C	Luckyer	VVL	70260	4	6 6		4			LLL	t	2	
19		тай	m	TTITZZ			Tr	72710 12161	LTL	IFATI		7		LTT			77	I	T	
20		y	4(0)	ннни	HHF	ባዞ		רג און לא את	47	भ ०५ म ०५ ता		714		X 11-1	ๅ๚		нн	r	r	
	25	?	ф			1				3 3				X						
	26	?	\boldsymbol{x}					94444	1	4		ķ							-	
	27	цю	4			1			1	ļ				1				١	1	
	28	взр	1	X X	X X	X		מל נגלר ל	22	2 2 2 5 2 2 3 5		X					2	2		
21		ч ³ ры л-	1 1	424 177) 1	1			1					77				4	1	
22		шдй	" {	1/1/1/1	かんか			१८ ७		R R R 14							77	Ř	R	
	29	?	_					H. 14	H1	H KI HI				ш						
23	23		1, 1	2222	1222			214242	222	2										
20		ыры	bi {		1				LI								22	2		
	20							ادر	"	47 ២៤ ៤ ៤										
	30	?	ĵ	ត្រក់។ក់	3332			8 8 5 8 8	8	228							ر ت آ			
	31 32	ять	йз						ľ	řř				3 D				F		
	33	ю	йy						m	III K M										
	34		ŭa 100			m	72													
	34	Я	'a {				"													
24		0	0, 0	กกรก	744)]		מאחתאחר	20	102002		22		22	^					
								0		000		0			•			~		

Figure 1a. The first part of a table from Lytkin 1952, showing glyph variants of Old Permic characters. Note columns 1 and 2 which give ordering of primary (1–24) and secondary (25–34) characters.

	XVII. (1510e) Cnucku astyku XVI—XVII lekol							Предп гаем	tre	почерниния					300	weck	_	бу	4 8		nuta.	la.								
Homok	THON		. Перуппа Шер			∏ ≥þ.		4	7		pynna		a			перво		20	DPOKZAYSO		ii.	200	3.	90	Соврем.		la la		men.	
Kbisið.	АЗб.	משפת	MK	y K.	ap. don	Ap.	1911	2911	Kan	Han 2	y Han.	<i>4C8</i> .	Син	ЭСин.	Устьв.	устав	скарап.	(James)	DANCE DA DANCE DA DANCE DANCE DA DANCE DA DANCE DA DANCE DA DANCE DA DANCE DA DANCE DA DANCE DA	nanel hns	TEA.	Op. Spe (no Fran	Munperture (no Utherperty	Munyckys XII-XI bb	kypcub XIII 0.	nbou	строчн	названия	Sycchie High A	Apednameponsor nactor (manear) XIV B.
างรั	ì	1	I	ı		7	L	L	ι	۷	4	L	,	L	/	ı	L	a	^	Ÿ	a		a	d a	v	A	α	alpha		
	d	d	d	a		9	Ø	T	do	d	0	ds	ф	ø	7	ф	0	ph	0	φ	B			9 B		P	4	phi	9	
	a	4	5	5		Í	9		9		-	59	4	9?	9	γ	2	9		r	~		r	51	V	1	r	gamma	1	(119
^ .	V	Ŋ	>	2		51	٨	4	7	λ	a	λ	J	J	F	Ŋ	1	d	Δ	٨	V		J	A8	8	Δ	δ	delta	Д	
14	~		r	1		V	r	r	r	V	r	r r	r	1	4	1	r	ĕ	~	6	t		6	4.8		E	ε	epsilon	E	V
	æ	æ					m	di.	יוז		π	יזי	T	M	4	π	m												ж	τ h
	D)	pp.	m	ш		Ø	Ø	ci7	Д		W	5 07	100	D	7	亚	四													₩
П	0	а	a	I		Π	0	D	0		7	0	ø	D	4	I	Д												3	
	1	,	1	ı		7	r	Ь	1		6	L '4	1	1	1	1	1	c's.						27	,	z r	5	zeta ypsilan	2	Γ
7	1		1	7		211	7	7	7		7	7	7	7		7	1	i	1	,	L	₹2	ı	iij	1	1	i	iota	ïι	7
444	ا د ۲	_	4	4		A	<	4	<		4	LA		1	3	I,	2	K	K	ĸ	۲.,			иц		K	ж	карра	к	_
ULF	1	V	V	1		V	1	~	V		1	rr	~	r	ر ا	У	у	e	1	ام	8	1	1	121		1	ı	lambda	^	
 \sqr	J.	4	k	4		h	Н	н	н		н	нζ	н	н	8	Ħ	4	m	M	М	м		u	нн		M	μ	my	М	
vvi	~	v	~	~		~	~	~	~		r	~	r	2	5	บ	~	n	Ν	N	Y			vrv		N	V	ny	н	v
	1		h	h	16	H	4	r	r		r	n/	6	16	ľ	H	h	ē.	日	Н	h			ጉ ዛሳ		Н	7	eta		
4	١,	כו	4	4		4	5	4	4		4	4	4	4	5	4	n	n	r	π	œ			IT	а	П	π	pi	П	
	4	~	A.	7		0	1	7	R		v	r Bi	1	B	p	P	P	r	P	P	₽		R	198		l p	D	rho	P	PY
LLL	t	T	c	C		(4	6	د		b	L	1	4	5	T		5	3	Ĺ	0			G		Σ	00	sigma	c	\r
71	I	T	I	里		E	I	I	I		I	T	T	I	کر	I	7	t	T	T	で			TTJ		$\mid \tau \mid$	τ	tau	т	Tr
ин	r	n	н	4		И	н	н	<i>H</i>		Н	н	H	H	W	H	lu	18			u			u B	,	В.	B	beta	y	
"	'	ľ				'					ľ			1	d	1	'n										ľ			
															+	Ï	17:3													
1	١,		J	,		١,						١,			ľ	1]													•
2		'				8	R	x	X		X	x	×	2	3	X	X												B(aa)	
	Ι.	١,	,	3		3		1	ı		٦		1	ر	2	7	9	th						روو		6	12	theta	1 -	
孙) À	1	१प्र	٩		را سفرا	17	P	P		R	R R) R	ľ	7	1	le	x			1			33	- 1	3	1	1	3	
121	"	''		"		['					```		'	'	III	<u>_</u>							1''	'		1	1	·Ш	
																-	7												b	
22	1 2		2	1			2		7			z	2	2		3 2	Z												Γ	7
	-		1	2	1		1		-			S S	1	1	,	7	1									1			р В1	
					br							"			n															
r E	F					E	T		F			5	7	T	2	1	8												T T	
Ъ	"						^		*			"	ľ	*	1	6	l°												F	
						7	_	1	_																			- 1	á H) .)
						_	7		7			7	7	-		חר	- 1												ro (kio)	Ί
						7	F	T	F	Z	3	τ		I	d	77	3												ra La	
	1	1	*	0								8						_								1	, .	amor	1"	
1000	' "					1	r	n		۳	7	~	~	12	1,	U	1	ō	h	1	٦			w		2	\ a	ameg	Ĩ	
1	1	1			W			1		1	1	W		1	1 4		1		1						- 1		1	1	1	1

Figure 1b. The second part of a table from Lytkin 1952, showing glyph variants of Old Permic characters. Note that the first three columns from the Nomokanon 1510 are repeated from Part 1 of the table.

OF ZEVIMIN 71 TYPHTENDU MTY: 6972 HIM
NATURAL ZAVMTZDU NLIVI(IZLY)HOMINAL IZLAV.
THY PAZA XTITI KADITUCŤ VVTV TY TESSIZLTU
ZVINABOT TEVRACTYVEVA. (ZTZACZVIPŤČIIZA
LZPTTLHHILVZVH TLJHJCAV IZVIPLATTEY
LZPTTLU (A TIPTTG VA CYVAA VVZ ZŤAL IMANI
YAGV., Z HHIFA. ŤIPYVT AHZVITIVUVI ABG

Figure 2. Old Permic inscription on the icon "Troitsy". The text is the beginning of a story about Abraham and Sarah (Genesis 18:1–8), from Lytkin 1952 (Table 17).

Figure 3. Skvorcovskij's c. 1860 transcription of the Old Permic inscription on the icon "Troitsy" from Lytkin 1952 (Table 18). Linebreaks here were to get a 40cm by 5cm text to fit on an A4 sheet.

Наше воспроизведение*

сэс' 5 вэлмосс' ис 6 йэн аврамлу мамбри тупу дорын, пукыс'лу сылу $\ddot{\text{оз}}$ 'ос 10 в $\ddot{\text{оз}}$ 'ын ч' $\ddot{\text{омл}}$ он 6 сылон луншоро.

ви5'ис авраам ас с'инйасон и адб'ис ас с'инмон: воз' 3' а 3 вэрос сулало мадыд сылыс';

адз'ымыс' пышйис в \hat{o}_3 'з'а нылу ас ч' \hat{o} мл \hat{o} н \hat{o} йыс \hat{o} 17 дорыс' и йурбыртис му \hat{o} 3'.

и шиис: мз (мэзосо) йэнмо бара-о адз'им ко мэдалсо тэ воз'ад, ас вэрид вылти ин мун.

мэд вайс'ас ва мыс'кыныс полос тийан и сайколч'алныл ту-

Наше чтение*

1* Сэ(ш) вѣлмос(ш)ис 7 иэн аурамлу 8 мамбри тупу дорын пукышлу 9 сылу $\ddot{o}(5'o)$ с у($\dot{o})\ddot{z}$ 'ын чôмлон сылон луншо(ро) 11 ви $_5$ 'ис \ddot{a} ура \ddot{a} м 12 \ddot{a} (с) (ш)ин(и)а(сон) \ddot{u} 18 \ddot{a} (д) $_3$ 'ис \ddot{a} с (ш)инмон (у \dot{o}) \dot{z} ' $_3$ ' $_3$ 14

2. \vec{r} верос сулало (м)атыд сылыш \ddot{a} дз'ы мыш 15 пышиис уо̂з'з'а нылу 9 ас 16 чо̂млон оёс д(о)рыш и 13 иврбыртис 8 муо(\ddot{z} ') \dot{u} 13 шиис мз иэнмо (ба)ра о \ddot{a} дз'им ко мэдал (со) 18 тэ

3. уо̂3'ад ä(c) уэрид ¹⁹ уылти йн мун/мэд уаиша(c) у(a) (мыш'к)ыныс п(о̂)дос тииан. й ¹³ сай(к)од-

Figure 4. Lytkin's Cyrillic transcription of the Old Permic inscription on the icon "Troitsy". On the left ("our reproduction") is the normalized Komi text; on the right ("our reading") is the literal transcription, with additions and corrections in parentheses.

7m~ 2hd2n/h n2npd1 tω[½] ΣΕ\νητ[½]7t \ρνχη[∇η] χηιης έργεεν ζ[ς] [κ]ην[η]ε[ςην] η ε[λ]ιης ες $[x]_{J \wedge \Lambda U \wedge \Lambda}$ [hm] 112 Δ amant these [N] atmy then Δ in Δ hmis Angle is Janglus unit Y[v] and J 7578776 VIPN[I] \vec{j} RTT \vec{v} TWVVIN [DZ] ∇Z \vec{v} \vec{z} \vec{z} \vec{z} MY [LU] IM LM12Y Z[Γ] LM Δ JY LU Δ J 7~ Mr~ p[7] [MINAC] INVINC p[W] ANC p[7] p[вълмос пі ис сэ ш неи аурамлу мамбри ТУПУ ö(%o)c у(w) ъын чимлон дорын пукышлу сылу сылон аураам а[с] [пі]ин[и]а[сон] луншо ро визис äc адзис ш инмон yw]vva сылыш адъы мыш ыѡҳҳа нылу àс нопими öыс дорыш ивр-Myo[3] шиис \mathbf{M} быртис омнеи [ба]pa äдъим M-[cö] ä[c] ушъад уылти уэрид MVH ПЄМ

Figure 5. My typeset version of part of the text and Lytkin's Cyrillic literal transcription ("our reading") of the Old Permic inscription on the icon "Troitsy". The linebreaks in the text above are the same as those of the text in Figure 3 (hyphens have been added at line-final word breaks). Diacritical marks and brackets are given in red here. Note the use of COMBINING DOT ABOVE, COMBINING DIAERESIS, COMBINING COMMA ABOVE, and CYRILLIC COMBINING TITLO.

п ш дос

тииан.

Й

ire de l'Acad Imp. des So. servio 1788. Hanche A

сай к од ча д-

уаиша[с]

y a

мышк ыныс

Infeription Agrainique, qu'on lit au deffus d'une rmage de la Sainte Trinite, placée à l'Eglise de St. Exienne de Perme dans la Parosso de Woschemsk au Cercle de Farensk. EXECUTABLE TYPHTENDEN CITY PROTENLIAM DEVENAZABUCZ GUA LUSTUMALLIBANNE UPANXTITFAVYJVZŤ667UVŸŤ6116T6V6A J TX V OCVIDE BACTIZACT IZACIZ MIRLZ PITENIIIT VZ VN FEVIEJAVI 761 VLOTIX V PZTT TOUINTATOVÁCIONA VOZAVALUMAUVATUT LVZCLANITTTVCT NAVIATHLHATY"H VC A HIITA FIVYUTANTLI TIVVI VI VIACVAUHVIASZA THIH TO ANABER AIM TAV H TRAD TO TOUZE THE WILL VILLETTUS WICTTOTA AVLAPTTOITY WAAPTEA TIPATTA3 CIOVILIATVITICIA UULZATTTH TIMUIACTCT HTTJAÄAL PHTACTAY 17111711117 VATTAAFFI 717 CJINJI NU X UZNIILVINLN Au desfus de l'inage d'Abraham est come TNVTVI. Au desfus de Sara LTVVI. Au desfus des trois anges du second FT. du troisieme 3+4T72 Табл. 15. Фризовский смимок с древнепермской надписи на иколе "Тронцы". Из книги "Nova acta Academiae Scientiarum Imperialis Petropolitanae", m. VI, 1790.

Figure 6. Frizovskij's transcription (dated 1790) of the Old Permic inscription on the icon "Troitsy" from Lytkin 1952 (Table 15). The transcriber has written the name Abraham as $7 d \nabla^2 \nabla abram$ for $7 d \nabla^2 \nabla abram$ for $7 d \nabla^2 \nabla abram$.

Таба. 27. Послословие на деревянной доске переплета рукописной библии XV в. Из статьи И. С. Некрасова "Пермские письмена в рукописях XV в.".

Figure 7. Russian-language text written in Old Permic script cryptographically, from Lytkin 1952. Circled are the words ٵ หาก เห็นการ (ชันการ) for ปรุกาก นุงการ นุงการ (ชันการ) 'wonderfully' and เปล้า นินาร เกาอัดเหนล (spobivsa) for เปลก เปลานาร เกาอัดเหนล (spobivsa) 'misleading'

CAB CBERPHATE EMENIOFS ES. QUIPO: ~
WHO IN EVENTAIN UNIVERTEUNIVA
LOVEZ UNDENT & XZRHENU: ZUF. ~
Hi: f.

Figure 8. Old Permic inscription dated 1510 from Kyldašev (Lytkin 1952). The words circled are "ht me for the mezöse 'lord', ht is for the isus 'Jesus', ht ke for the for the kristose 'Christ', ht had be if for he had be if or in the had some of these are using the Cyrillic titlo (already encoded).

Наше воспроизведение

мэзосэ исус кристосэ йэнлон пии, мылышты мэно крэка мортос вас'укос. амин'. кылдас'эв.

Наше чтение

мээ исс ксэ ¹ Ёнлон пии ² мылышты мэно крэка мортос вашукос ³: амин: кылдашэу ⁴

Figure 9. Cyrillic reading and transcription of the text in Figure 8.

A. Administrative

1. Title

Final proposal for encoding the Caucasian Albanian script in the SMP of the UCS

2. Requester's name

UC Berkeley Script Encoding Initiative (Universal Scripts Project)

Author: Michael Everson

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

Liaison contribution.

4. Submission date

2012-04-26

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

Yes

6b. More information will be provided later

No.

B. Technical - General

1. Choose one of the following:

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

Yes.

1b. Proposed name of script

Old Permic.

1c. The proposal is for addition of character(s) to an existing block

No.

1d. Name of the existing block

2. Number of characters in proposal

43.

3. Proposed category (A-Contemporary; 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)

Category E.

4a. Is a repertoire including character names provided?

Yes.

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

Yes.

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

Yes.

5a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

Michael Everson.

5b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.).

Michael Everson.

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

Yes.

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

Yes.

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

Yes.

8. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. 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 Unicode Character Database http://www.unicode.org/Public/UNIDATA/ UnicodeCharacterDatabase.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

See above.

C. Technical - Justification

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

Nο

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

Yes.

2b. If YES, with whom?

Il'ja Yevlampiev, Esa Anttikosi, Enye Lav, Atruras JaThere has also been contact with a major centre for Uralic studies, Kotimaisten kielten tutkimuskeskus, Helsinki. The principle authors of some of the materials used to prepare the proposal (chiefly Lytkin 1952 and Stipa 1961), are deceased.

- 2c. If YES, available relevant documents
- 3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?

Scholars and Komi language enthusiasts.

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

Old Permic was used chiefly to write Komi texts, but a number of Russian texts are also found in Old Permic script.

Reference

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

Yes.

5b. If YES, where?

Marginal internet use (some fonts).

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

No.

6b. If YES, is a rationale provided?

6c. If YES, reference

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

Yes.

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

No.

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

8c. If YES, reference

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

No.

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

9c. If YES, reference

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

No; though this is a Greek-derived script like Coptic, Cyrillic, Armenian, Georgian, and Gothic.

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

Yes.

10c. If YES, reference

§2 above.

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

Yes.

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

No.

11c. If YES, reference

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

No.

11e. If YES, reference

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

No.

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

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

No.

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