2010-02-17

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

Международная организация по стандартизации

Doc Type: Working Group Document

Title: Proposal for encoding Georgian and Nuskhuri letters for Ossetian and Abkhaz

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

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

Replaces: N1962 (1999-02-26)

Date: 2010-02-17

1. Introduction. This proposal requests the addition of a number of letters used for Ossetian and Abkhaz. These include:

- four Khutsuri letters (U+10C7, U+2D27, U+10CD, and U+2D2D) which were used as casing pairs in the nineteenth century by Jalguzidze for Ossetian. These letters correspond to Cyrillic bu and \(\varphi \).
- one Mkhedruli letter (U+10FD) which was used in an Ossetian orthography of the 1940s. This letter corresponds to Cyrillic α .
- two Mkhedruli letters (U+10FE and U+10FF) which were used to form digraphs in Abkhaz orthography of the 1940s.

1.1. Khutsuri additions for Ossetian

U+10C7 GEORGIAN CAPITAL LETTER YN

2 U+2D27 GEORGIAN SMALL LETTER YN

2 10F7 georgian letter yn

Z U+10CD GEORGIAN CAPITAL LETTER AEN

Z U+2D2D GEORGIAN SMALL LETTER AEN

S 10FD georgian letter aen

1.2. Mkhedruli additions for Ossetian and Abkhaz

 ${\bf S}$ u+10fd georgian letter aen

ა 10D0 georgian letter an

2 10F7 georgian letter yn

z 2D2D georgian letter yn

O U+10FE GEORGIAN LETTER HARD SIGN

O U+10FF GEORGIAN LETTER LABIAL SIGN

2. Unicode Character Properties.

```
10C7; GEORGIAN CAPITAL LETTER YN;Lu;0;L;;;;N;;Khutsuri;;2D27;
10CD; GEORGIAN CAPITAL LETTER AEN;Lu;0;L;;;;N;;Khutsuri;;2D2D;
10FD; GEORGIAN LETTER AEN;Lo;0;L;;;;N;;;;
10FE; GEORGIAN LETTER HARD SIGN;Lo;0;L;;;;N;;;;
10FF; GEORGIAN LETTER LABIAL SIGN;Lo;0;L;;;;N;;;;
2D27; GEORGIAN SMALL LETTER YN;Ll;0;L;;;;N;;Khutsuri;10C7;;10C7
2D2D; GEORGIAN SMALL LETTER AEN;Ll;0;L;;;;N;;Khutsuri;10CD;;10CD
```

3. Character names. The letters YN and AEN represent [†] and [æ] respectively. The Georgian names for the HARD SIGN and the LABIAL SIGN are *magari* 'hard, strong' and *labializebuli* 'labialized' respectively. Note that the relative code positions of YN and AEN are the same in all three charts (Khutsuri and Mkhedruli).

4. Bibliography.

Jalguzidze 1820-1824.

Бигулаев, Б. Б. 1952. *Краткая история осетинского письма*. Государственное издательство Северо-Осетинской АССР, Дзауджикау.

Чочуа А. М. & В. Н. Маан. 1939. Абхазский букварь. Сухуми.

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

	10A	10B	10C	10D	10E	10F
0	10A0	1080	1000	S	6	3
1	10A1	L	10C1	ბ	J 10E1	6
2	10A2	P 10B2	5	3	8	Q
3	TOA3	On 10B3	1003	Q	1 0E3	3 10F3
4	10A4	Ф	1004	1 0D4	9	S 10F4
5	10A5	10B5	A	3	1 0E5	3
6	b	10B6		6	<u>C</u>	ф 10F6
7	10A7	1087	2	O	9	2
8	10A8	9		()	7	B
9	10A9	1089		3	S	Q
Α	1 0AA	10BA		<u> </u>	() 10EA	C
В	10AB	10BB		3	d	• • 10FB
С	F	P 10BC		6 10DC	10EC	10FB 6
D	O	S 10BD	Z 10CD	(1)	5 10ED 6	S 10FD
E	10AE	10BE		3 10DE	6	7
F	1 0AF	10BF		J 10DF	3 2	O

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Capital letters (Khutsuri)

This is the uppercase of the old ecclesiastical alphabet. The style shown in the code charts is known as Asomtavruli. See the Georgian Supplement block for lowercase Nuskhuri.

```
GEORGIAN CAPITAL LETTER AN
     à
10A1
         GEORGIAN CAPITAL LETTER BAN
10A2
         GEORGIAN CAPITAL LETTER GAN
10A3
         GEORGIAN CAPITAL LETTER DON
10A4
         GEORGIAN CAPITAL LETTER EN
     ٦Ė
10A5
         GEORGIAN CAPITAL LETTER VIN
10A6
     'n
         GEORGIAN CAPITAL LETTER ZEN
10A7
         GEORGIAN CAPITAL LETTER TAN
10A8
         GEORGIAN CAPITAL LETTER IN
     þ
10A9
         GEORGIAN CAPITAL LETTER KAN
10AA
     ъ
         GEORGIAN CAPITAL LETTER LAS
10AB
         GEORGIAN CAPITAL LETTER MAN
         GEORGIAN CAPITAL LETTER NAR
10AC
     \mathcal{Q}
10AD
         GEORGIAN CAPITAL LETTER ON
10AE
         GEORGIAN CAPITAL LETTER PAR
10AF
         GEORGIAN CAPITAL LETTER ZHAR
10B0
     ئل
         GEORGIAN CAPITAL LETTER RAE
10B1
         GEORGIAN CAPITAL LETTER SAN
10B2
         GEORGIAN CAPITAL LETTER TAR
10B3
     \Omega
         GEORGIAN CAPITAL LETTER UN
10B4
         GEORGIAN CAPITAL LETTER PHAR
10B5
         GEORGIAN CAPITAL LETTER KHAR
10B6
         GEORGIAN CAPITAL LETTER GHAN
10B7
         GEORGIAN CAPITAL LETTER QAR
10B8
         GEORGIAN CAPITAL LETTER SHIN
10B9
         GEORGIAN CAPITAL LETTER CHIN
     C
10BA
         GEORGIAN CAPITAL LETTER CAN
10BB
         GEORGIAN CAPITAL LETTER JIL
10BC
         GEORGIAN CAPITAL LETTER CIL
10BD
         GEORGIAN CAPITAL LETTER CHAR
10BE
         GEORGIAN CAPITAL LETTER XAN
10BF
         GEORGIAN CAPITAL LETTER JHAN
     Û
10C0
         GEORGIAN CAPITAL LETTER HAE
10C1
         GEORGIAN CAPITAL LETTER HE
         GEORGIAN CAPITAL LETTER HIE
10C2
10C3
         GEORGIAN CAPITAL LETTER WE
10C4
         GEORGIAN CAPITAL LETTER HAR
         GEORGIAN CAPITAL LETTER HOE
```

Additional letters for Ossetian

10C7	ડ	GEORGIAN CAPITAL LETTER YN
10C8		<reserved></reserved>
10C9	\square	<reserved></reserved>
10CA	\square	<reserved></reserved>
10CB	\square	<reserved></reserved>
10CC		<reserved></reserved>
10CD	Z	GEORGIAN CAPITAL LETTER AEN

Mkhedruli

This is the modern secular alphabet, which is caseless.

```
10D0
         GEORGIAN LETTER AN
10D1
         GEORGIAN LETTER BAN
10D2
         GEORGIAN LETTER GAN
     გ
10D3
         GEORGIAN LETTER DON
10D4
         GEORGIAN LETTER EN
      ე
10D5
         GEORGIAN LETTER VIN
10D6
         GEORGIAN LETTER ZEN
10D7
     ഗ
         GEORGIAN LETTER TAN
10D8
     O
         GEORGIAN LETTER IN
10D9
         GEORGIAN LETTER KAN
      3
10DA
         GEORGIAN LETTER LAS
10DB
         GEORGIAN LETTER MAN
```

```
10DC
     б
         GEORGIAN LETTER NAR
10DD
         GEORGIAN LETTER ON
10DE
      3
         GEORGIAN LETTER PAR
10DF
         GEORGIAN LETTER ZHAR
10E0
         GEORGIAN LETTER RAE
      b
10E1
         GEORGIAN LETTER SAN
     ტ
უ
10E2
         GEORGIAN LETTER TAR
10E3
         GEORGIAN LETTER UN
10E4
      ფ
ქ
         GEORGIAN LETTER PHAR
10E5
         GEORGIAN LETTER KHAR
10E6
         GEORGIAN LETTER GHAN
10E7
         GEORGIAN LETTER QAR
      ყ
წ
10E8
         GEORGIAN LETTER SHIN
10E9
         GEORGIAN LETTER CHIN
10EA
         GEORGIAN LETTER CAN
      3
10EB
         GEORGIAN LETTER JIL
10EC
         GEORGIAN LETTER CIL
10ED
         GEORGIAN LETTER CHAR
10EE
         GEORGIAN LETTER XAN
10FF
         GEORGIAN LETTER JHAN
     X
10F0
         GEORGIAN LETTER HAE
```

Archaic letters

10F1	ઉ	GEORGIAN LETTER HE
10F2	Ω	GEORGIAN LETTER HIE
10F3	3	GEORGIAN LETTER WE
10F4	3	GEORGIAN LETTER HAR
10F5	₹	GEORGIAN LETTER HOE
10F6	ф	GEORGIAN LETTER FI
	10F2 10F3 10F4 10F5	10F2 Q 10F3 3 10F4 3 10F5 8

Additional letters for Mingrelian and Svan

10F7 2 GEORGIAN LETTER YN 10F8 8 GEORGIAN LETTER ELIFI

Additional letters

10F9 Q GEORGIAN LETTER TURNED GAN 10FA Q GEORGIAN LETTER AIN

Punctuation

Date: 2010-02-17

10FB : GEORGIAN PARAGRAPH SEPARATOR

Modifier letter

10FC ⁶ MODIFIER LETTER GEORGIAN NAR ≈ <super> 10DC δ

Additional letters for Ossetian and Abkhaz

```
10FD S GEORGIAN LETTER AEN
10FE O GEORGIAN LETTER HARD SIGN
10FF O GEORGIAN LETTER LABIAL SIGN
```

	2D0	2D1	2D2
0	5	1 2D10	TU 2D20
1	y 2D01	L 2D11	A 2D21
2	3	U 2D12	5
3	5	Щ 2D13	Ц 2D23
4	7 7	P	4
5	777 2D05	2D15	A
6	5	11 2D16	
7	17 2D07	4	2
8	1	y 2D18	
9	4 2009	h	
Α	111 2D0A		
В	3	4	
С	Fi 2D0C	2D1C	
D	2D0D	5	Z 2D2D
Е	1 2D0E	<u>U</u>	
F	4 2D0F	ZD1F	

Small letters (Khutsuri)

This is the lowercase of the old ecclesiastical alphabet. See the Georgian block for uppercase Asomtavruli.

2D00	r,	GEORGIAN SMALL LETTER AN
2D01	ý	GEORGIAN SMALL LETTER BAN
2D02		GEORGIAN SMALL LETTER GAN
2D03	ŋ	GEORGIAN SMALL LETTER DON
2D04	η	GEORGIAN SMALL LETTER EN
2D05	m	GEORGIAN SMALL LETTER VIN
2D06	Ъ	GEORGIAN SMALL LETTER ZEN
2D07	m	GEORGIAN SMALL LETTER TAN
2D08	7	GEORGIAN SMALL LETTER IN
2D09	4	GEORGIAN SMALL LETTER KAN
2D0A	na	GEORGIAN SMALL LETTER LAS
2D0B	∂	GEORGIAN SMALL LETTER MAN
2D0C	К	GEORGIAN SMALL LETTER NAR
2D0D	ш	GEORGIAN SMALL LETTER ON
2D0E	ч	GEORGIAN SMALL LETTER PAR
2D0F	ч	GEORGIAN SMALL LETTER ZHAR
2D10	ьh	GEORGIAN SMALL LETTER RAE
2D11	lı	GEORGIAN SMALL LETTER SAN
2D12	р	GEORGIAN SMALL LETTER TAR
2D13	e Щ	GEORGIAN SMALL LETTER UN
2D14	ф	GEORGIAN SMALL LETTER PHAR
2D15	7	GEORGIAN SMALL LETTER KHAR
2D16	'n	GEORGIAN SMALL LETTER GHAN
2D17	4	GEORGIAN SMALL LETTER QAR
2D18	y þ	GEORGIAN SMALL LETTER SHIN
2D19	þ	GEORGIAN SMALL LETTER CHIN
2D1A	U di	GEORGIAN SMALL LETTER CAN
2D1B		GEORGIAN SMALL LETTER JIL
2D1C	m	GEORGIAN SMALL LETTER CIL
2D1D	5	GEORGIAN SMALL LETTER CHAR
2D1E	X	GEORGIAN SMALL LETTER XAN
2D1F	X	GEORGIAN SMALL LETTER JHAN
2D20	пи	GEORGIAN SMALL LETTER HAE
2D21	٢	GEORGIAN SMALL LETTER HE
2D22	5	GEORGIAN SMALL LETTER HIE
2D23	4	GEORGIAN SMALL LETTER WE
2D24	¥	GEORGIAN SMALL LETTER HAR
2D25	ďi	GEORGIAN SMALL LETTER HOE

Additional letters for Ossetian

2D27	2	GEORGIAN SMALL LETTER YN
2D28		<reserved></reserved>
2D29	\square	<reserved></reserved>
2D2A	$ \bigcirc \bigcirc$	<reserved></reserved>
2D2B		<reserved></reserved>
2D2C		<reserved></reserved>
2D2D	Z	GEORGIAN SMALL LETTER AE

Date: 2010-02-17

Figures.

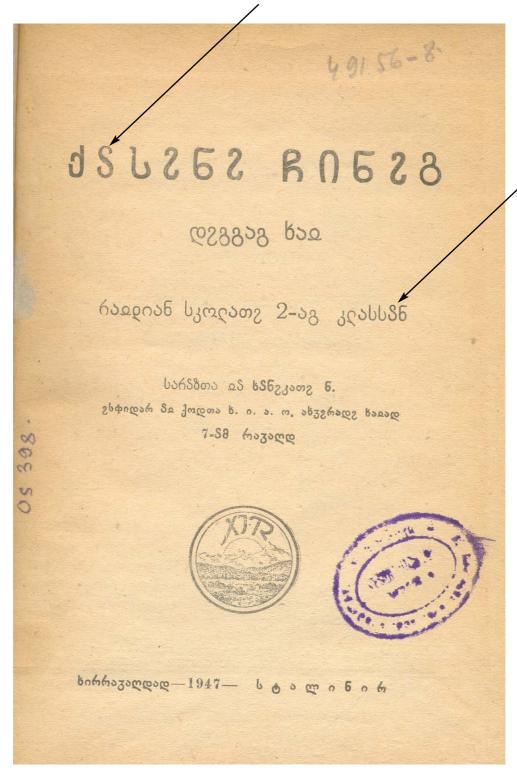


Figure 1. Sample showing GEORGIAN LETTER AEN in Ossetian. In the title it is shown in the mtavruli style.

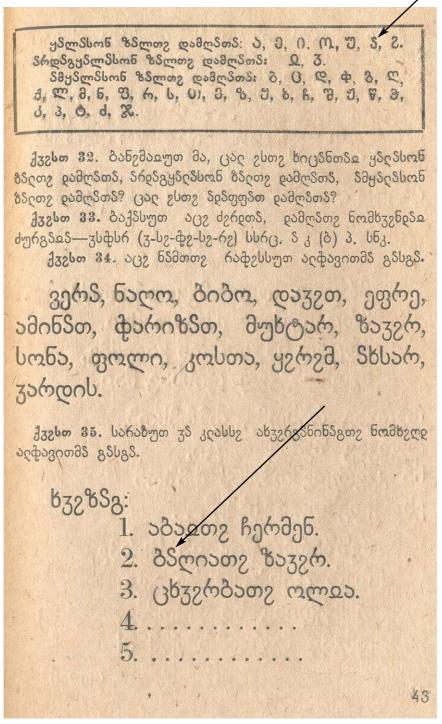


Figure 2. Sample showing GEORGIAN LETTER AEN in Ossetian.

```
ქული 29. 38 ჩინვგად რატესსუთ ტადნა დეკუა თავრა_
ლონ, ყარონ ამა ბარსთონ ყვედეკათე.
 ქვესთ 30. კასადაგ დარ მა არყვედე ქანუთ ამა ნეტტესსუთ
თავიალონ, ყაიონ ამა фაისთონ ყვებევათთა.
  § 4 ySmSbmb S8S S8ySmSbmb &Smos.
 ქკვსთ 31. ბალუთ ხიცანთაჲ აცვ ბალთა: ა, ე, ო, უ,
S, z, d, a, a, a. ბალუთ მა ქაცვ ბალია ძურგადა ბად-
გომ ვაჲი ძეს თენგდარ? ქაცე ბაითა ძურამ ანცონდარაი
SOS JS(32002 OS 826pS6So?
  %S. 3, 0, 0, M, 7, 5,2, 63206260 95 CSLM. 6015
    On, 3, 8, J, b, h, 7, J, F, 3, d, 3, 6, d, X, - 6322-
  6260 Saysesumeons.
    85mos: a 585 z os bzza6z60 56@5895@560.6015.
     ალდავით (აბეთგ რანყავარდ)
   დამლათან სა რანყავარდ უ აბთა:
  386634860596W
  Sy s & st se sa sa st sa se c so sa sa se
 3 3 3 6 6 % 3
  38 38 38 de 38 38 38
   დამღათგ რანყავარდ ხვგინგ ბლტამით.
  ალტავით ზონგნ ახხვესქანე ძერდგათე ძერდთა აგურენან.
42
```

Figure 3. Sample showing GEORGIAN LETTER AEN in Ossetian.

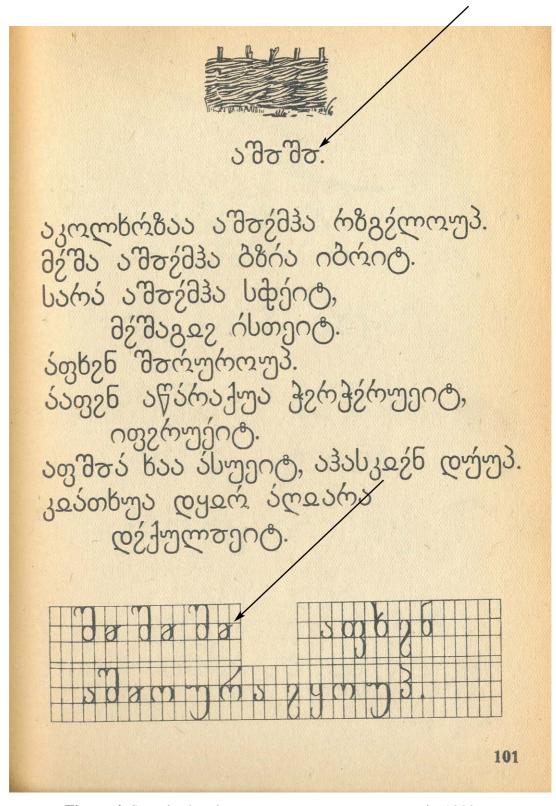


Figure 4. Sample showing GEORGIAN LETTER HARD SIGN in Abkhaz.

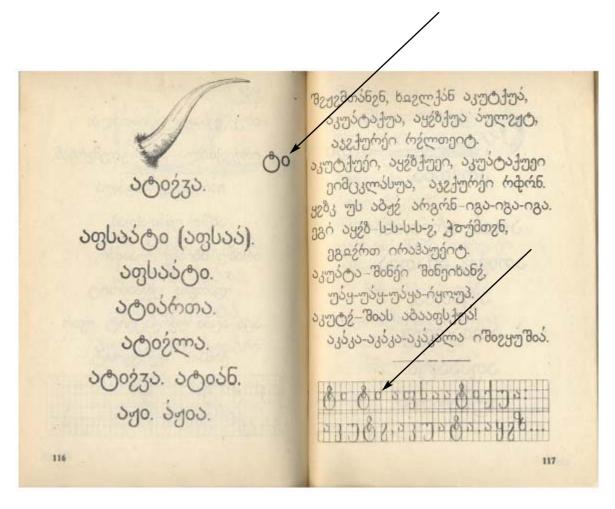


Figure 5. Sample showing GEORGIAN LETTER LABIAL SIGN in Abkhaz.

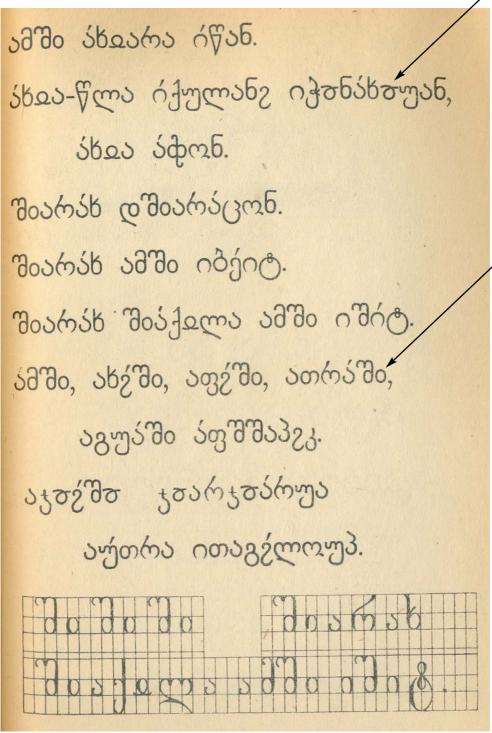


Figure 6. Sample showing GEORGIAN LETTER HARD SIGN and GEORGIAN LETTER LABIAL SIGN in Abkhaz.

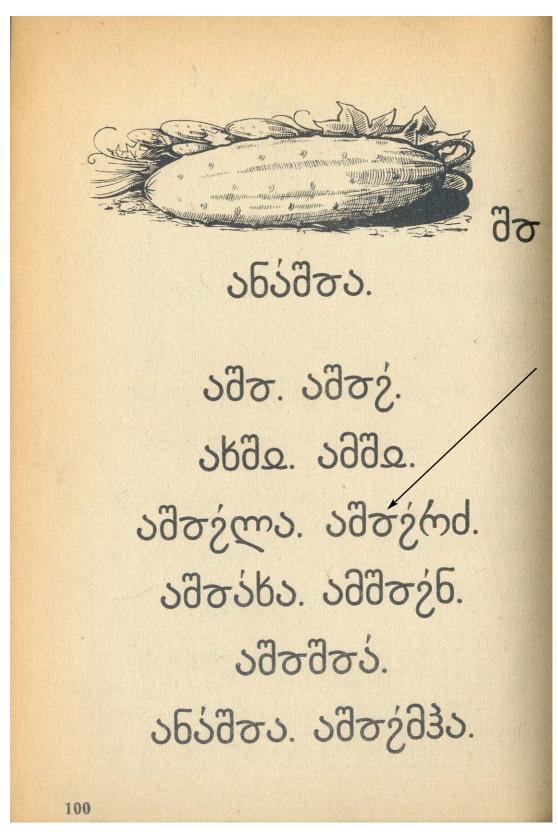


Figure 7. Sample showing GEORGIAN LETTER HARD SIGN in Abkhaz.

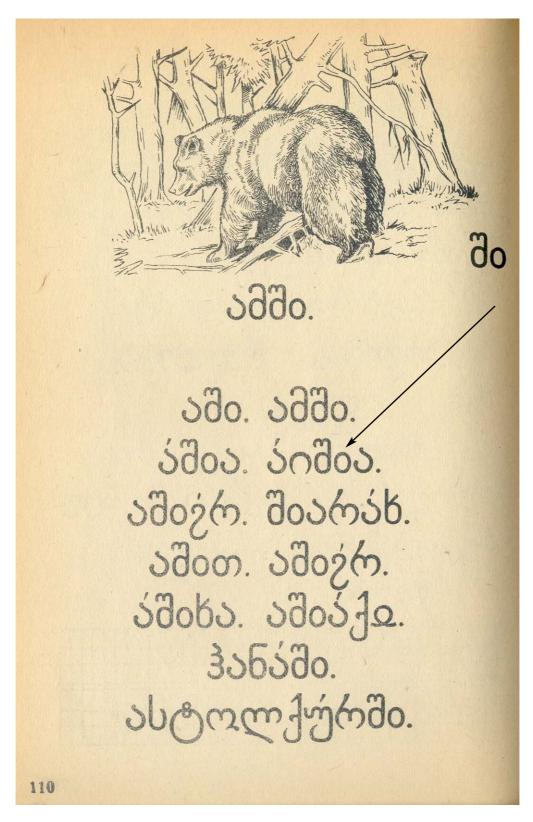


Figure 8. Sample showing GEORGIAN LETTER LABIAL SIGN in Abkhaz.

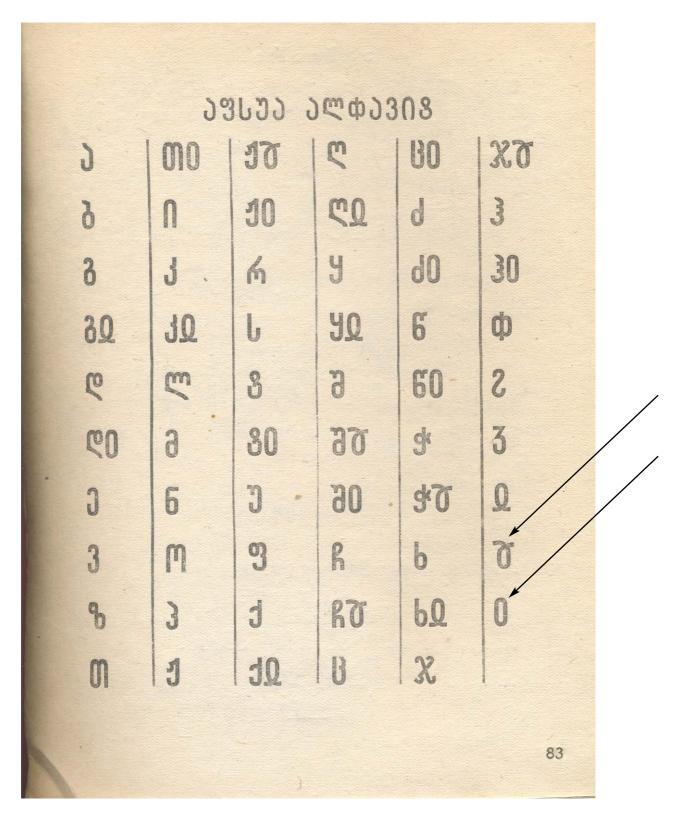


Figure 9. Abkhaz alphabet table (*apsua alfavit*) showing GEORGIAN LETTER HARD SIGN and GEORGIAN LETTER LABIAL SIGN in Abkhaz.

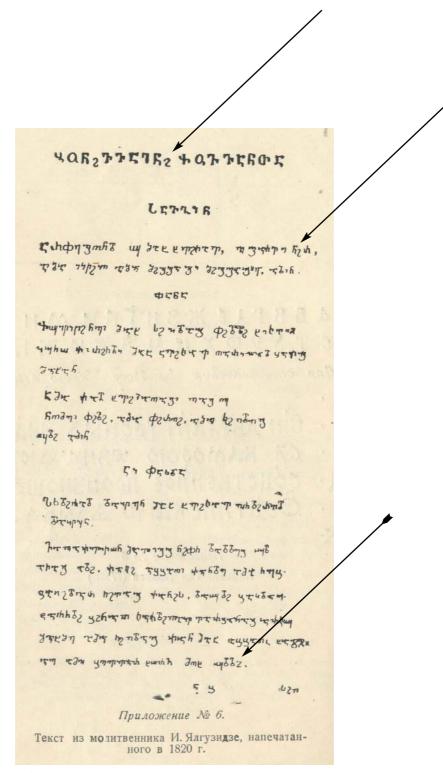


Figure 10. Sample of Ossetian text in Nuskhuri,

showing GEORGIAN CAPITAL LETTER YN and GEORGIAN SMALL LETTER YN indicated with plain arrows and what appears to be GEORGIAN SMALL LETTER AEN indicated with the fletched arrow. From Ialguzidze 1820–1824. In this example the capital YNs are not properly designed; they are not meant to descend below the line.

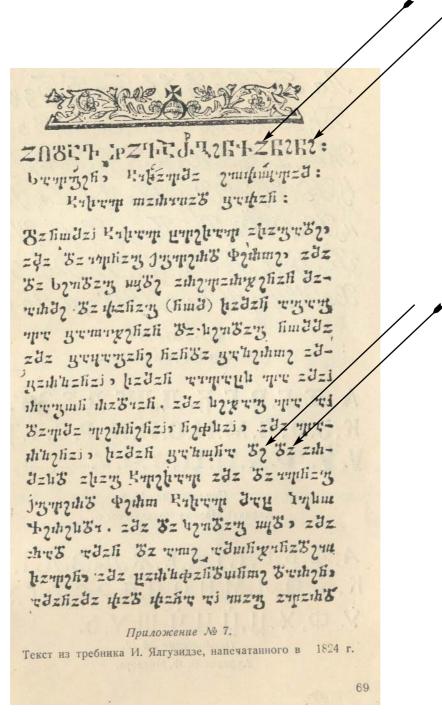


Figure 11. Sample of Ossetian text in Nuskhuri,

showing Georgian Capital Letter aen and Georgian Small Letter aen with plain arrows alongside Georgian Capital Letter yn and Georgian Small Letter yn with fletched arrows From Ialguzidze 1820–1824.

The letters here are designed with correct proportions and position., as $Z_2 Z_z$

A. Administrative

Title

Proposal for encoding Georgian and Nuskhuri letters for Ossetian and Abkhaz

2. Requester's name

UC Berkeley Script Encoding Initiative (Universal Scripts Project)

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

Liaison contribution.

4. Submission date

2010-02-17

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)

No.

1b. Proposed name of script

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

Yes

1d. Name of the existing block

Georgian, Georgian Supplement

2. Number of characters in proposal

7.

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 A.

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 (ordered preference: True Type, or PostScript format) for publishing the standard? **Michael Everson.**

5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer.

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)?

Ves.

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.

No.

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

Yes.

2b. If YES, with whom?

The authors.

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?

Linguists, Caucasianists.

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

Used historically and in modern editions.

4b. Reference

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

Yes.

5b. If YES, where?

Scholarly publications.

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

Yes.

6b. If YES, is a rationale provided?

Yes.

6c. If YES, reference

Accordance with the Roadmap. Keep with other Georgian characters.

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

No.

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

No.

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

8c. If YES, reference

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

No.

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

9c. If YES, reference

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

No.

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

10c. If YES, reference

11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

No.

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

11c. If YES, reference

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

No.

11e. If YES, reference

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

Nο.

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?