## ISOIIEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC $10646{ }^{1}$ Please fill all the sections A, B and C below.

Please read Principles and Procedures Document ( $\mathbf{P}$ \& 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 additional cyrillic characters


4. Submission date:

26 January 2006
5. Requester's reference (if applicable): $\qquad$
6. Choose one of the following:

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

1. Choose one of the following:
a. This proposal is for a new script (set of characters): No

Proposed name of script:
b. The proposal is for addition of character(s) to an existing block: Cyrillic supplementary
Name of the existing block:
$\qquad$
3. Proposed category (select one from below - see section 2.2 of $\mathrm{P} \& \mathrm{P}$ document):
$\begin{array}{lllll}\text { A-Contemporary } & \ldots . .- \text { B.1-Specialized (small collection) } & \text { X } \\ \text { C-Major extinct } & \text { B.2-Apecialized (large collection) } \\ \text { E-Minor extinct }\end{array}$
F-Archaic Hieroglyphic or Ideographic .......

4. Proposed Level of Implementation (1, 2 or 3) (see Annex K in P\&P document):

Is a rationale provided for the choice?
If Yes, reference:
Some of the proposed characters are combining characters.
5. Is a repertoire including character names provided?

a. If YES, are the names in accordance with the "character naming guidelines" in Annex $L$ of P\&P document?
b. Are the character shapes attached in a legible form suitable for review?

6. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Professor R. M. Cleminson, University of Portsmouth
If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used: . Dilyana 1.2, made with FontLab, available from: http://userweb.port.ac. uk/~cleminsr/fonts/dilyan.ttf
7. References:
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? $\square$
Yes
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?
8. 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)?

## 9. 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.

[^0]
## C. Technical - Justification

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

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? $\quad$| Proposal prepared under the auspices of the International Committee of |
| :--- |
| Slavists' Commission for Computer-Supported Processing of Mediæval |
| Slavonic Manuscripts and Early-Printed Books |

If YES, available relevant documents:
3. Information on the user community for the proposed characters (for example:

$$
\begin{aligned}
& \text { size, demographics, information technology use, or publishing use) is included? } \\
& \text { Reference: }
\end{aligned}
$$

4. The context of use for the proposed characters (type of use; common or rare) Various Reference: See §D below.
5. Are the proposed characters in current use by the user community? If YES, where? Reference: ....................................arly and liturgical publications.
6. After giving due considerations to the principles in the $\mathrm{P} \& \mathrm{P}$ document must the proposed characters be entirely in the BMP?

If YES, is a rationale provided?


If YES, reference:
The cyrillic alphabet belongs within the BMP.
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? No

If YES, is a rationale for its inclusion provided?
If YES, reference:
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

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?

If YES, is a rationale for its inclusion provided?


If YES, reference:
See §D below, combining cyrillic ten thousands sign
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided?

See §D below, under individual characters Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? No If YES , reference:
12. Does the proposal contain characters with any special properties such as control function or similar semantics?

If YES, describe in detail (include attachment if necessary)
13. Does the proposal contain any Ideographic compatibility character(s)?

If YES, is the equivalent corresponding unified ideographic character(s) identified?
If YES, reference:

## D. Proposal

## 1. User community and context of use

These characters have been used historically as part of the cyrillic alphabet; some of them are still in use in the liturgical books of the Orthodox churches. All are used by contemporary scholars who study the mediæval documents in which they appear. Most can be categorised as common, but a few, such as it, are less so, since few manuscripts using the orthographical system of which it was part survive.

## 2．Character properties and hyphenation

Unicode character properties are given in the table below．The mediæval tradition did not use hyphens， nor in many cases word－spacing，but it did permit line－breaks within a word．The general practice（if we ignore the complications involving superscripts）was to permit line－breaks after a vowel，jer or paerok； however，in the Bosnian tradition a line could end with any character．Modern Church Slavonic printed books follow essentially the same conventions as Russian，which，broadly speaking，allow hyphenation at syllable－boundaries．There is no way of reducing this to any sort of consistency．

## 3．List of proposed characters with justification

We request 42 characters，as listed．
đ＾CYRILLIC LETTER YN This is a standard character in Rumanian cyrillic，both manuscript and printed． See fig．7．

Ifla CYRillic letter iotified a This letter occurs regularly from the earliest times to modern Church Slavonic（see figs．5， 6 etc．）．It is not to be unified with я（which is a variant of $A$ and should probably not have been distinguished from it），which is used as a distinct character alongside it in early modern Bulgarian（fig．9）．

If th Cyrillic letter iotified yat This letter occurs in certain early cyrillic texts，in which it is used contrastively with t．See fig． 11.

W8 CYRILLIC LETTER MONOGRAPH UK At present this is unified with cyrillic $Y_{Y} \gamma$ ，which is completely unjustifiable，as these two letters are not the same either historically or functionally．It is not unusual to find manuscripts using both $y$ and $s$（see fig．15）．Both historically and in modern Church Slavonic，$\varphi$ is also used as a numeral，but $s$ is only used as a letter：the two are therefore not interchangeable．Old cyrillic 8 originated as a ligated form of or，but cannot be unified with it as the two quickly diverged in usage．They are distinguished by orthographical conventions going back many centuries and formalised in modern Church Slavonic；according to these rules，the substitution of either $y$ or or for 8 is an error，and all three characters are required for proper Church Slavonic typesetting．
ll CYRILLIC LETTER IOTA Used in scholarly literature since the nineteenth century to transcribe glagolitic $\mathbb{\Psi}$ ．
33 CYRILLIC LETTER DZELO This is the original form of this letter，the function of which was taken over at a later period by $\mathbf{S}$ ，which was originally cyrillic stigma．The two co－exist in manuscripts，particularly where the former is used as a letter and the latter as a numeral．

Z2 CYRILLIC LETTER REVERSED DZELO This is a common character，particularly in early South Slavonic manuscripts and inscriptions，and particularly when used as a numeral．It may co－exist with S，e．g．in manuscripts such as NBKM 880，RGB Sevast＇janov 17 （the former has $\%$ as well！）；such texts cannot be adequately encoded without the possibility of distinguishing between these characters．
hI＇ы CYRILLIC LETTER YERY（FORM WITH BACK JER）The distinction between mand an is of great importance to palæography，and essential for a comprehensive palæographic description of cyrillic sources．Although the two letters are characteristic of different periods and traditions，the one does not simply replace the other：there are important manuscripts，such as the Dobrejšo Gospels，in which both are found．
$\AA t$ CYRILLIC LETTER DJERV This is the old cyrillic letter for the voiced palatal affricate，used particularly in the Bosnian manuscript tradition and in early Bosnian printings（fig．4），where it also serves to indicate palatal I and $n$ ，by analogy with Italian gl，gn．The glyph is the ancestor of 040B／045B 下ћ，but the two characters do not correspond either phonetically or etymologically．0402／0452 万万 was in turn derived from Ћћ in 1819．$\AA$ cannot be unified with $\dagger$ because the latter corresponds to it only partially，and besides，the two are sorted differently：$\star$ comes between $\boldsymbol{n}$ and $к$ ，while $\dagger$ comes between $д$ and е．

W CYRILLIC LETTER BROAD OMEGA This character is found alongside $\omega$ in most sixteenth－and seventeenth－century alphabets（figs． 1,2 ）and is most frequently used with a distinctive supralinear
element (in most typefaces unique to this character) for the vocative particle "O!" (fig.5). However, in some alphabets (e.g. the 1631, 1653 and 1692 Primers) it appears without any supralinear element, and in the 1648 grammar is used to correspond to Greek $\omega$ in proper names derived from Greek, in which function it may take the same diacritics as the other vowel characters (cf. on f .93 v in the paradigm of
 distinctive, not the supralinear element, and $\omega$ is not to be regarded as $\omega+$ diacritic.
It is probable that 047C/047D CYRILLIC CAPITAL/SMALL LETTER OMEGA WITH TITLO is intended to represent $\omega$, though the representative glyph is unrecognisable and the supralinear element of $\omega$ is anything but a titlo. The Public Review Proposal No.83, for providing a correct glyph for this character, would allow encoding of $\omega$ alongside $\omega$ without having to resolve the problem of what the supralinear element of the former actually represents.

Xx CYRILLIC LETTER BLENDED JUS This character is found in certain Middle Bulgarian manuscripts where it replaces (and eliminates) both $\kappa$ and m . To encode it as if it were equivalent to either of them would be misleading, and a distinct character is therefore required.

AA CYRILLIC LETTER CLOSED LItTLE JUs This character is found in Old Church Slavonic and Middle Bulgarian manuscripts, and may be used contrastively with A : in the Codex Supraslensis (fig.6), for example, s represents $j e$ and $\Delta$ represents $~ e$. There is thus a distinction in sound and meaning between the two.

IAIA CYRILLIC LETTER IOTIFIED CLOSED LITTLE JUS In many manuscripts following an orthographical system where a represents a non-jotated vowel, a represents the corresponding prejotated vowel.

## OHㅇ CYRILLIC LETTER REVERSED YU This character appears in some early Middle Bulgarian manuscripts

 and inscriptions, and has palæographic and phonological significance. It is uncertain whether it has a common origin with Юぃ. See Andrej Bojadžiev, «Житието на св. Кондрат - първоначалната история на неговия славянски текст и развитието на старобългарската правописна система с голям ер», Кирило-Методиевски студии, кн. 10 (1995), 46-81, and specifically p. 55.bb CYRILLIC LETTER UNDIFFERENTIATED JER Used in transcribing documents where it is impossible to tell the difference between $ъ$ and $ь$ (a common situation in late mediæval Russian archival materials). Cf. С.И. Котков, «О совместном издании древнерусских скорописных памятников лингвистами и историками», Лингвистическое источниковедение, Москва, 1963, 16-17.

Z3 CYRILLIC LETTER EARLY ZE This is the form found in the earliest sources, replaced in more recent ones by 33. Sixteenth-century and (in Moscow) seventeenth-century alphabets invariably include both forms (fig.1), and there are printed books in which both occur.

OY CYRILLIC LETTER DOUBLE CAPITAL UK This is the title-case form of Oy (see fig. 10), and should be encoded for consistency with other characters having distinct upper-case and title-case forms.
s CYRILLIC PAEROK Frequent from the earliest period, originally to replace an omitted jer, later also to break up consonant clusters. It is a spacing character (see fig. 12).
s CYRILLIC COMBINING PAEROK In early-printed books, and likewise in modern Church Slavonic service books, spacing paerok is not normally used. Instead a combining variant of the character is used, placed above the preceding consonant, usually slightly to the right of centre. There are two common variants of the glyph (see fig. 3, where one is called пג́єккъ and the other éjикъъ, but in practice no consistent distinction either of usage or nomenclature is maintained). The similarity between the latter and U+033E, COMBINING VERTICAL TILDE (an abbreviation mark standing for omitted "er" or "re" in certain forms of Latin script), is co-incidental and purely visual, and the one should not be substituted for the other.
${ }^{-}$CYRILLIC KAVYKA Used on either side of a word or passage of text to indicate a substitution or alternative reading, usually indicated in the margin likewise between kavyki. See fig.13. Functionally this is equivalent to the use of U+2E02/2E03, LEFT SUBSTITUTION BRACKET and RIGHT SUBSTITUTION BRACKET,
but the marks are visually different and there is no difference between the kavyka at the beginning and kavyka at the end.
${ }^{`}$ CYRILLIC COMBINING KAVYKA Occasionally it is necessary to indicate an alternative reading to only part of a word, as in fig. 14, where the feminine ending in the margin is substituted for the masculine ending in the text. In this case the kavyka is placed directly over the relevant letters. Note that it is typographically as well as functionally distinct from U+0306 COMBINING BREVE, which is visible in жи́лялй, the penultimate word of this example.

O COMBINING CYRILLIC TEN THOUSANDS SIGN Written around a numeral to indicate that number $\times 10,000$, e.g. $\mathbb{B}=20,000$. It is desirable to distinguish between this and U+20DD COMBINING ENCLOSING CIRCLE because of its distinct semantic-letters may be encircled for other reasons in mediæval and early modern cyrillic texts, e.g. certain types of abbreviation-and for consistency in the series of cyrillic higher numeral marks ( $\mathrm{U}+0482,0488,0489$ and the two proposed below).
$\because$ COMBINING CYRILLIC TEN MILLIONS SIGN Written around a numeral to indicate that number $\times 10^{7}$.

- COMBINING CYRILLIC HUNDRED MILLIONS SIGN Written around a numeral to indicate that number $\times 10^{8}$.
" COMBINING CYRILLIC ISO This character is always presented in sources which are normative by the standards of the day as a separate diacritic with its own name. As can be seen from fig. 8, it is typographically distinct from a combination of breathing and acute, both of which are present in the same list, but rendered differently.
${ }^{\text { }}$ COMBINING CYRILLIC APOSTROF This character has likewise always been regarded as a distinct entity. As can be seen from fig. 8 , it too is typographically distinct from a combination of breathing and grave.


## 4. Sorting order

Prescribing a sorting order for many of the proposed characters is problematic, for two reasons. The first is that actual practice was not consistent, as can be immediately seen from a comparison of the alphabets in fig. 1 and fig.2, particularly the last nine characters. The second is that the Unicode cyrillic blocks are a superset of all cyrillic characters, not all of which were used in any given historical writing system (just as no modern national alphabet uses the full repertory of cyrillic characters), so that it is difficult to establish ordering in respect of two characters which never occur in the same text. However, the following suggestions may be provisionally adopted. The remaining characters are not sortable.
$\uparrow$ should follow U+0475 $v^{2}$
If should follow U+044E vo ${ }^{3}$
It should follow U+0463 $\mathrm{t}^{4}$
\% should follow U+0479 or or be sorted the same as it ${ }^{5}$
l should follow U+0457 ,
; should precede U+0455 s or be sorted the same as it ${ }^{5}$
2 should follow U+0455 s or be sorted the same as it ${ }^{5}$
HI should precede U+044B ы or be sorted the same as it ${ }^{6}$
$\AA$ should precede U+043A к ${ }^{2}$
$\omega$ should probably be sorted with U+0461 $\omega^{5}$
X should follow $U+046 \mathrm{~B} \mathrm{k}^{4}$
a should follow U+0467 $\mathrm{n}^{4}$
IA should follow ${ }^{4}$
Of should follow U+044E $\boldsymbol{v}^{4}$
b should be sorted as $U+044 A \mathrm{~m}^{6}$
3 should be sorted as U+0437 $3^{5}$
OV should be sorted as U+0478 OY, of which it is the titlecase equivalent.

[^1]|  | xx0 | xx1 | xx2 |
| :---: | :---: | :---: | :---: |
| 0 | 1 | 历 | $0 \%$ |
| 1 | 1 | 大 | $s$ |
| 2 | $\underline{F}$ | $\cdots$ | 5 |
| 3 | Id | $\omega$ | $\checkmark$ |
| 4 | H | 8 | $\cup$ |
| 5 | H | 8 | （－） |
| 6 | \％ | A |  |
| 7 | 8 | A | $\bigcirc$ |
| 8 | $\downarrow$ | 18 | \％ |
| 9 | l | $1 \Delta$ | ות |
| A | 5 | $\mathbf{O H}$ |  |
| B | 3 | 01 |  |
| C | 2 | b |  |
| D | 2 | b |  |
| E | TI | 5 |  |
| F | 「【 | 5 |  |

## TABLE XX - Row xx: Additional Cyrillic

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Hex Name
00 CYRILLIC CAPITAL LETTER YN; Lu;0;L;;;;,N;;;;XX01;
01 CYRILLIC SMALL LETTER YN; LI;0;L;;;;,N;;;XX00;;XX00
02 CYRILLIC CAPITAL LETTER IOTIFIED A; Lu;0;L;;;;,N;,;,XX03;
03 CYRILLIC SMALL LETTER IOTIFIED A; LI;0;L;;;;,N;;;XX02;;XX02
04 CYRILLIC CAPITAL LETTER IOTIFIED YAT; Lu;0;L;;;;,N;;;;XX05;
05 CYRILLIC SMALL LETTER IOTIFIED YAT; LI;0;L;;;;N;;;XX04;;XX04
06 CYRILLIC CAPITAL LETTER MONOGRAPH UK; Lu;0;L;;;;N;;;;XX07;
07 CYRILLIC SMALL LETTER MONOGRAPH UK; LI;0;L;;;;N;;;XX06;;XX06
08 CYRILLIC CAPITAL LETTER IOTA; Lu;0;L;;,;,N;;;,;XX09;
09 CYRILLIC SMALL LETTER IOTA; LI;0;L;;;;N;;;;XX08;;XX08
0A CYRILLIC CAPITAL LETTER DZELO; Lu;0;L;;;;,N;;;;XX0B;
OB CYRILLIC SMALL LETTER DZELO; LI;0;L;,;;N;;;XXOA;;XXOA
OC CYRILLIC CAPITAL LETTER REVERSED DZELO; Lu;0;L;;,;,N;;;,XXOD;
0D CYRILLIC SMALL LETTER REVERSED DZELO; LI;0;L;;;;N;;;XXOC;;XXOC
0E CYRILLIC CAPITAL LETTER YERY (FORM WITH BACK JER) ; Lu;0;L;;;;N;;;;XX0F;
0F CYRILLIC SMALL LETTER YERY (FORM WITH BACK JER) ; LI;0;L;;,;,N;;;XX0E;;XX0E
10 CYRILLIC CAPITAL LETTER DJERV; Lu;0;L;;;;;N;;;;XX11;
11 CYRILLIC SMALL LETTER DJERV; LI;0;L;;,;N;;;XX10;;XX10
12 CYRILLIC CAPITAL LETTER BROAD OMEGA; Lu;0;L;;;;N;;;;XX13;
13 CYRILLIC SMALL LETTER BROAD OMEGA; LI;0;L;;;;N;;;,XX12;;XX12
CYRILLIC CAPITAL LETTER REVERSED YU; Lu;0;L;,;;N;;;,XX1B;
1B CYRILLIC SMALL LETTER REVERSED YU; LI;0;L;;;;N;;;XX1A;;XX1A
1C CYRILLIC CAPITAL LETTER UNDIFFERENTIATED JER; Lu;0;L;;;;N;;;,XX1D;
1D CYRILLIC SMALL LETTER UNDIFFERENTIATED JER; LI;0;L;;;;N;;;XX1C;;XX1C
1E CYRILLIC CAPITAL LETTER EARLY ZE; Lu;0;L;;;;N;;;;XX1F;
1F CYRILLIC SMALL LETTER EARLY ZE; LI;0;L;;;;N;;;XX1E;;XX1E
20 CYRILLIC LETTER DOUBLE CAPITAL UK;Lt;0;L;;;;,N;;;0478;0479;
21 CYRILLIC PAEROK;Sk;0;,;,,%,%;,;
22 COMBINING CYRILLIC PAEROK;Mn;232;NSM;;;;N;NON-SPACING PAEROK;;;;
23 CYRILLIC KAVYKA;Sk;0;ON;;,;N;NON-SPACING CYRILLIC KAVYKA;;;;
24 COMBINING CYRILLIC KAVYKA;Mn;230;NSM;;;;N;NON-SPACING CYRILLIC KAVYKA;;;;
25
CYRILLIC CAPITAL LETTER BLENDED JUS; Lu;0;L;;;;;;;;;,XX15;
CYRILLIC SMALL LETTER BLENDED JUS; LI;0;L;;;;N;;;XX14;;XX14
CYRILLIC CAPITAL LETTER CLOSED LITTLE JUS; Lu;0;L;;,;;N;;,;XX17;
CYRILLIC SMALL LETTER CLOSED LITTLE JUS; LI;0;L;;;;N;;;XX16;;XX16
CYRILLIC CAPITAL LETTER IOTIFIED CLOSED LITTLE JUS; Lu;0;L;;;;N;;;;XX19;
CYRILLIC SMALL LETTER IOTIFIED CLOSED LITTLE JUS; LI;0;L;;;;N;;;XX18;;XX18
COMBINING CYRILLIC TEN THOUSANDS SIGN;Me;0;NSM;,;,;N;,;,;
COMBINING CYRILLIC TEN MILLIONS SIGN;Me;0;NSM;;,;;N;;,;;
COMBINING CYRILLIC HUNDRED MILLIONS SIGN;Me;0;NSM;;;;,N;;,;;
COMBINING CYRILLIC ISO;Mn;230;NSM;;,;,N;,;,;
COMBINING CYRILLIC APOSTROF;Mn;230;NSM;;,;N;,;,;
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fig. 11574 Primer

The top circle shows CYRILLIC LETTER EARLY ZE beside CYRILLIC LETTER ZE. The middle circle shows CYRILLIC LETTER MONOGRAPH UK alongside the digraph CYRILLIC LETTER UK. The bottom left circle shows CYRILLIC LETTER IOTIFIED A, the right bottom circle a CYRILLIC LETTER BROAD OMEGA.

 Gавяпккагти.

fig. 21631 primer

fig. 31631 Primer

Figure 2: The top circle shows the CYRILLIC LETTER UK digraph alongside the CYRILLIC LETTER MONOGRAPH UK. The bottom two circles enclose the CYRILLIC LETTER BROAD OMEGA and the CYRILLIC LETTER OMEGA.

Figure 3: The circled glyphs are CYRILLIC PAEROK.

Figure 4：Examples of CYRILLIC LETTER DJERV．
$0 \mathrm{~T} \Lambda \varepsilon$ §む $\AA 0$

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 88ОНА，ААНТНССМ末А ногАяпитих．
 －нй
Hetomaveno h3 मe（L4 HTaABAM－ скога， 8 C 4 Онискн． SHMCKYHES． sa $\begin{gathered}\text { X K } \\ \text { H }\end{gathered}$




fig． 4 Ogledalo duhovno，Venice， 1628

Figure 5 （below）：The first line contains CYRILLIC LETTER BROAD OMEGA，the beginnings of line 2 has CYRILLIC LETTER IOTIFIED A．At the end of line 2，note the occurrence of the CYRILLIC LETTER UK digraph，whereas the third line from the bottom shows CYRILLIC LETTER MONOGRAPH UK． In line 7，the CYRILLIC LETTER IOTIFIED A occurs in the same word as CYRILLIC LETTER LITTLE YUS，obliging an orthographic distinction．








 MENÈ：
fig． 5 Acts of the Apostles，modern edition

[^2]

Figure 7: The circled glyphs are CYRILLIC LETTER YN.
fig. 7 Carte românească de învățătură, Iaşi, 1646

fig. 8 Grammar, Moscow, 1648
Figure 8: The circled bottom right mark of punctuation is the COMBINING CYRILLIC APOSTROF, the other circle encloses the COMBINING CYRILLIC ISO. Compare the breathing and acute diacritics in the same passage (red rectangles).

Благодарөние на голЋмы-ты жрьтвы, които почитаема-та Госпожыа Марию Н. Герова принесө, ръчникъ-тъ можяа да ивллзз докрай въ духа и начрьтание-то, коөто покойный-тъ му авторъ ондте нарядилъ. Съ твзи си жрьтвы Госпожя Мариа H. Герова въздигны несъкрушимъ памятникъ на покойнын си съпруг'ъ и изплъни най-добросъвъстно задлъжөниата, които той имаше камъ народа си, а тіа сама заслужи най-голъммж хвалж и благодарность.
fig. 9 Najden Gerov, Рђчникь на бльгарскый языкъ, vol.5, Plovdiv, 1904

##  пита́телемz, Оу́yи́телемъ, При-    ческое пад̃̌ ма́лимМ Ỡ'гоками носа́цими:

$$
\hat{w} \text { Hxatisat. } \quad 57
$$






 fig. 10 Katichisis malyj, Buda, 1801: (a) p. 3 and (b) p. 57

Figure 9 (above): Note the CYRILLIC SMALL LETTER IOTIFIED A occurring in the same text as CYRILLIC CAPITAL LETTER YA, appearing in the next word.

Figure 10: The lower example shows CYRILLIC LETTER DOUBLE CAPITAL UK, which is the titlecase to the uppercase of the character (circled in the example above it).

fig. 11 Izbornik of 1073

Figure 11: The top example is of an ordinary CYRILLIC LETTER YAT, the lower example of CYRILLIC LETTER IOTIFIED YAT.

##  <br> к丈дтн, нженасттрай <br> 

Figure 12: This example shows the CYRILLIC PAEROK.

Fig. 12 Athos, Zographou Monastery, MS IIIб 6, f.61v.


гА̂̀ помйвйй, трииждд.

с\% греч. "w res't cantex "
Fig. 13 Horologion, Moscow, 1980, p26

Figure 13: Examples of CYRILLIC KAVYKA.


 пролнка́то, но ннггто́же ми́ав мй мג̀.

Figure 14: Example of COMBINING CYRILLIC KAVYKA and (in penultimate word) COMBINING BREVE.

Fig. 14 Euchologion, Moscow, 1906, f. 121


Fig. 15 РГАДА, ф.237, оп.1, ч.2, №969, f.101v

Figure 15: Example showing the CYRILLIC LETTER MONOGRAPH UK and the second element contained in the UK digraph.


[^0]:    ${ }^{1}$ Form number: N3002-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)

[^1]:    ${ }^{2}$ Follows the practice of early alphabets.
    ${ }^{3}$ Follows the practice of early alphabets, but may not be acceptable to modern scholars.
    ${ }^{4}$ There is no early precedent, but there is a good case for this ordering.
    ${ }^{5}$ Early practice is inconsistent.
    ${ }^{6}$ There is no early precedent.

[^2]:    
    
     HKOAHKOPACTO THЂMEXA，DVCOOIX O NH
    
    

    Figure 6 （above）：The first line contains CYRILLIC LETTER IOTIFIED A．Line 4 has CYRILLIC LETTER LITTLE YUS and line 5 has two examples of CYRILLIC LETTER CLOSED LITTLE YUS．

