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Glagolitic Alphabet in *Unicode*: Proposals for the Perfection of Slavonic Ranges

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Несмотря на то, что существующая версия Unicode (4.1) представляет собой несколько более совершенную версию по сравнению с предыдущими в отношении передачи глаголического алфавита, она не является ни полной, ни достаточной в каком-либо ином отношении для использования. В частности, недостатки касаются (a) структуры диапазона, (b) инвентаря и расположения символов, (c) формы глифов, (d) имен букв и (e) числовых значений знаков.

Автор делает краткий обзор ранней истории глаголической системы, а затем выносит на обсуждение возможные способы решения существующих проблем.

Preliminaries

The present Unicode-version 4.1 of the Glagolitic writing system is neither complete nor in any other respect sufficient for its intended usage as a basic standard. In order to show this, the paper will shortly characterize the system and its early history and then propose a new version, discussing various options for the solution of special problems.

Theoretical requirements: A basic standard system must meet the following conditions:

– completeness,
– adequacy,
– practical functionality.

Since adequacy can only be achieved on a single historical level, the ordering, form and function of the units as well as their characterization (names of characters, etc.) have to depict the classic status of the Glagolitic system, reached during the Bulgarian development of O(ld) C(hurch) S(lavonic). Room provided, further elements (glyphs and/or functions) can be added to this set for reasons of practical functionality. They may be derived from the following phases of Glagolitic history (prehistoric phases marked by asterix *):

I. Original (Proto-) System of St. Constantine-Cyrill (ca. a. 862/3)*
II. Moravo-Pannonian period (863–885)*
III. Bulgarian period (886–1100):
1. Preclassic phase (886–893)
2. Classic phase (894 — ca. 950)
3. Postclassic phase (ca. 950–1100)

Remaining peculiarities of other regional developments, esp. the Croatian Square Glagolica, ought to be housed in special sets.

Practical premises: Since Unicode does not allow for later changes in the code tables, today the fulfilment of the outlined requirements is limited to certain additions to and corrections of the extant version (cf. below).

Possible solutions: Therefore, above from the proposed amendments of the basic version (1) at least two new tools will have to be created:

(2) a set comprising all peculiarities of the OCS development ("Glagolitic extended") or a complementary set, containing only necessary additions to the extant set ("Glagolitic Supplement").

(3) a new special version "Square (Croatian) Glagolitic".

In this paper only tasks (1) and (2) will be treated. But even after the creation of these sets not all possible needs (like variants for palaeographic analyses) will be provided for. For remaining tasks the area of Private Use Characters will have to be used.

General provisions:

a. Structure of the range: The whole range ought to be devided into 4 major parts — for neutral elements (letters), linear elements (like), supralinear elements (like syllabic dot above vowel letters) and (unusual in classic Glagolitic) sublinear elements (like for "x1000"). Subdivisions in the neutral part do not only concern capital and small letters, but also superscripts, digraphs, and special ligatures. In the linear part paired from unpaired punctuation, in the supralinear part combinations have to be divided from simple units.

b. Succession (ordering) of characters: Since units are to be grouped in variation sequences, homofunctional glyphs are to follow each other according to relevant, consistent criteria like age (e.g. secondary follows primary).

c. Selection: The basic inventory is to consist of all unique units (like or the connected digraph) and graphemic variants with a

stable form — function relationship (like primary and secondary). Room provided, certain non-individual OCS palaeographic variants (like preclassic for classic) may be included for practical reasons.

d. Multiple values (e.g. the 4 successive phonetic values of — [k'], /p/, /š/, /št/): cf. Unicode regulations.

e. Context-dependent values (like the phonetic vs. numeric value of all character glyphs): cf. Unicode regulations.

f. Transliteration: Deriving from a bialphabetic tradition, Glagolitic units have to be correctly assigned to extant Old Cyrillic equivalents and vice versa.

Critical comments on the present version

Completeness (superfluous and missing units):

C-Range: Above from most unique units and 4x2 variants (Big Izhe, connected Uku, younger [Cyrillic] Fritu, Small Yus with tail) of the classic alphabet the present inventory contains also an individual rendering of "Pe(chali)" (Sinaitic Abecedarium), the first (decomposed) part of the nasal vowel-digraph , post-classic Theta ("Fita"!) and 3 special glyphs of the Croatian redaction (Shtapic, Triangular *A*, Lat. Myslite). On the other hand we miss the unconnected Uku digraph ( ), its second component ( ), original Fritu ( ), and the Jery variants (and). Further missing variants are ligate Uku (corresponding to Cyrillic ѹ) and Wide Onu, even if the latter is rarely separated from its narrow partner ( ).

205-Range: While we observe 3 colon combinations known also from Cyrillic manuscripts, we miss the right-sided triple colon, simple and double colon, comma in the middle of the line, paragraph-closing , obelus and the paired colon. Most of them, however, can be taken from other Unicode ranges (as noted sub "Punctuation and diacritics").

A range for supralinear elements is to be added. If certain units (Titlos, dot, spiritus, etc.) are to be taken from other extant ranges, this should again be indicated adding the relevant links.

Glyph forms:

Leaving aside the few additions from the Croation tradition, our critical comments concern:

(1) the present, secondary Fritu that needs reshaping as it is missing the typical loop (ѳ) and ought to be inserted at the end, leaving its position 07/47 to the original Glagolitic form.

(2) the awkward form of the second Heru (22/52) ought to be reshaped (to resemble the sun with four rays: ¤).

(3) the form of No. 0C/3C (for the name "Djervi" cf. below!) represents a young variant and is to be reshaped as it is almost identical with Lat. Myslite (2E/5E).

Character names: Most of the chosen names are traditional, but origin partly from the late (Russian) Cyrillic tradition. In many instances this choice might be better than using the original names (like "Kitu" as precursor of "Shta"; yet "Izhica" ought to be replaced by "Ypostasu"), since we do not know all of them and must stick to common usage. In certain cases, however, the names are wrong or convey a false connotation and therefore must be replaced: "Initial Izhe" → "Big Izhe", "Djervi" → "Gehenna", "Otu" → "(Big) *O*", "Spidery Ha" → "Sunny Heru", "Fita" → "Theta" (or "Tita"). It might also be better to change the Croatian name "Trokutasti *A*" for English "Triangular *A*".

Arithmetic value: Even if not all values of the fourth row have been preserved — the number of extant variants ending with 6000 –, the lost original values can be reconstructed and added in brackets.

Computer Supported Processing of Slavic Manuscripts in Bulgaria: Repertorium Initiative

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Реперториум средневековых славянских рукописей представляет собой универсальный информационный массив аналитических описаний южнославянских кодексов XI–XVII веков. Проект начался десять лет назад в Институте литературы Болгарской академии наук. На сегодняшний день Реперториум содержит около 350 файлов в формате XML в соответствии с правилами TEI. Модель описания предусматривает, с одной стороны, полное кодикологическое описание рукописей, в котором очень подробно расписаны как палеографические и лингвистические данные, так как и постатейное содержание рукописи и идентификация текстов, с другой — хранение примеров из старославянских текстов (заглавие, начало и конец), записей и некоторых других фрагментов. Часть информационного массива представлена в Интернет, где возможен поиск информации. В рамках Реперториума выполняются несколько международных проектов, в частности: описание славянской коллекции Британской библиотеки, описание рукописей в Швеции, совместная работа с проф. Дэвидом Бирнбаумом (David Birnbaum) из Университета в Питтсбурге (США) по визуализации типологии сборников и некоторые другие. Реперториум объединяет также проекты по терминологии (болгарский, английский и русский языки) для описания рукописей и по библиографии в области медиевистики (совместно с Софийским университетом).

Computer-supported research and teaching in medieval studies in Bulgaria has been growing up at an increasing pace over the past decades with implementation of new methods in this area. The beginning was the Bulgarian-American project "Computer Supported Processing of Old Slavic Manuscripts" funded by IREX — Washington (1994–1995). At that time a new type of software was built. It was