# The Russian Language in the babel system

Version 1.3m

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#### 1 The Russian Language Definition File

The file russianb.ldf<sup>1</sup> is the source file for the Russian Language Definition file russianb.ldf to be loaded by the babel package with the option russian. It was derived by Igor A. Kotelnikov from the original version of russianb.ldf, first released by Olga Lapko and Johannes Braams and then adapted to the T2\* and X2 Cyrillic encodings by Vladimir Volovich and Werner Lemberg.

Starting the version 1.2, russianb.ldf is designed to work both with legacy non-unicode (8-bit) and new Unicode encodings of the source document files (input encodings) and of the font files (font encodings). This is achieved by excluding (bypassing) the \cyr... macros, which map every letter in a source file with given input encoding to a corresponding code point in a font file with a given font encoding when running modern engines, such as Lualatex or Xelatex, in native Unicode mode instead of legacy engines, such as Latex or PDFLATex, or Unicode engines in a compatibility (8-bit) mode. A few obsolete and controversial macros has been eliminated in first public release of version 1.2 of russianb.ldf.

The version 1.3 of russianb.ldf has been adapted to new features introduced in the version 3.9 of the babel package. In particular, the language attribute ancient has been introduced to support typesetting ancient and Church Slavonic books.

## 2 Usage

Typesetting Russian texts implies that a special input and output encodings should be used. Input encodings are those which are used in source (.tex) file. Output encoding is also known as the font encoding. It is implemented within the font files.

Generally, the user may choose between different available Cyrillic encodings. The current support for Cyrillic uses LH family of MetaFont fonts and theirs Postscript versions such as CM-super. LualateX and XelateX, being the Unicode-based succeeders of lateX, allow also for any Open Type (OTF) and True Type (TTF) fonts which have Cyrillic script, e.g. Computer Modern Unicode, Linux Libertine, and many other system fonts that came with Linux, Mac and Windows operating systems.

With the advent of Unicode, LATEX community are moving towards eliminating all existing encodings in favor of Unicode, but nowadays one should take care when switching from LATEX to LuaLATEX or XeLATEX since different packages should be loaded for those compilers.

Since earlier versions babel did not support XeLATEX (at least for some languages including Russian), the polyglossia package was generally recommended in the past for use with XeLATEX as a replacement for babel. Nowadays, babel can be used with any engines, including LATEX, PDFLATEX, LuaLATEX, and

 $<sup>^{1}\</sup>mathrm{The}$  file described in this document has the version number 1.3m and was last revised on 2021/01/10.

XeLATEX. Nevertheless some troubles may occur with some languages which have no promptly updated .ldf files.

#### 2.1 LATEX

When user's document is compiled with latex.exe or pdflatex.exe, recommended set of packages includes the inputenc and fontenc packages. They should be loaded before babel, for example,

```
\usepackage[T1,T2A]{fontenc}
\usepackage[utf8]{inputenc}
\usepackage[english,russian]{babel}
```

Some variations in the order of loading the packages are allowed in this case but it is better to follow one and the same convention at all circumstances: the babel package should go last, and fontenc must be the first.

Input encoding should be declared as option to the inputenc package. Known Cyrillic encodings include cp866 (MS DOS), cp1251 (Windows), koi8-u (UNIX) and their variants. Nowadays, this list is appended with utf8 input encoding.

Output encodings (also known as font encodings) are declared as options to the fontenc package. Known Cyrillic encodings are T2A, T2B, T2C, LCY, and X2; LWN is excluded from Russian support starting version 1.2 of russianb.ldf since LWN is excluded from the cyrillic bundle of related files.

#### 2.2 LuaLATEX

If Unicode fonts are not available, LualATeX can run in compatibility (8-bit) mode to use same font as LATeX does. However the package inputenc does not work with LualATeX and should be substituted with luainputenc. Source file is to be converted to UTF8 (Unicode-8) encoding; it is the only input encoding accepted by LualATeX. The 8-bit mode is invoked by the following sequence of packages:

```
\usepackage[T1,T2A]{fontenc}
\usepackage[lutf8]{luainputenc}
\usepackage[english,russian]{babel}
```

The order of the packages is crucial for Lual\*TEX in 8-bit mode. Since both luainputenc and babel should know what font encoding is selected, the fontenc package should be loaded first. Legacy input encoding management for LuaTEX is needed only for compatibility with old documents. For new documents, using UTF-8 encoding and Unicode fonts is strongly recommended. You've been warned! See tex.stackexchange.com/questions/31709/can-one-instruct-lualatex-to-use-t2a-encoded-fonts.

To invoke Unicode mode, one needs to load the fontspec package instead of luainputenc and fontenc and explicitly indicate which True Type or Open Type fonts should be used for romanic, sans-serif and monospaced types. The following example shows how to load Computer Modern Unicode (CMU) fonts, which is a part of all modern LaTeX distributions:

```
\usepackage{fontspec}
  \defaultfontfeatures{Renderer=Basic,Ligatures={TeX}}
  \setmainfont{CMU Serif}
  \setsansfont{CMU Sans Serif}
```

```
\setmonofont{CMU Typewriter Text}
\usepackage[english,russian]{babel}
```

The \defaultfontfeatures declares default font features for subsequent \setmainfont (which sets romanic fonts), \setsansfont (sans-serif) and \setmonofont (monospaced font). Font features can be set up on per font bases; for example

```
\usepackage{fontspec}
  \setmainfont[Renderer=Basic,Ligatures={TeX}]{CMU Serif}
  \setsansfont[Renderer=Basic,Ligatures={TeX,Historic}]{CMU Sans Serif}
  \setmonofont{CMU Typewriter Text}
  \usepackage[english,russian]{babel}
```

Here Renderer=Basic, Ligatures={TeX} activates ligatures available in LATEX.

Recall that the language enlisted last in the list of options of the babel package is assumed to be the main language of the document, which is also active language right after \begin{document}. As of version 3.9, the main language can be set as a value of the main option as follows

```
\usepackage{fontspec}
\usepackage[english,main=russian,german]{babel}
```

#### 2.3 XeLATEX

In XelfTeX, there is also a special mode for 8-bit compatibility. One can use \mathbb{XeTeXinputencoding} to change the input encoding temporarily, and the "bytes" encoding makes MelfTeX to work like a 8-bit lfTeX engine:

```
\XeTeXinputencoding 'bytes'
\usepackage[utf8]{inputenc}
\usepackage[T2A]{fontenc}
\usepackage[english,russian]{babel}
```

XeTeX can use a different input encoding but it always uses the Unicode internally, so that \mathbb{XeTeXinputencoding} performs a conversion of the input stream into Unicode; see tex.stackexchange.com/questions/36188/do-xetex-and-luatex-always-use-unicode.

Unicode mode is set up same way as for LuaLATEX, however the option Renderer=Basic can be dropped:

```
\usepackage{fontspec}
  \defaultfontfeatures{Ligatures={TeX}}
  \setmainfont{CMU Serif}
  \setsansfont{CMU Sans Serif}
  \setmonofont{CMU Typewriter Text}
\usepackage[english,russian]{babel}
```

#### 2.4 Modern and Ancient spelling

By default, a modern spelling is enabled. For Church Slavonic and other old books ancient spelling can be enabled by setting the attribute to ancient. To set an attribute, put the \languageattribute macro within a document preamble after babel, for example,

```
\usepackage[english,russian]{babel}
\languageattribute{russian}{ancient}
```

Setting the ancient attribute changes the built-in strings (caption names) and a date format. For example, the bibliography will be entitled as 'Литература' by default and as 'Библіографія' if the Russian language attribute is set to ancient. Same result can be achieved using a modifier as follows:

```
\usepackage[english,russian.ancient]{babel}
```

Using a modifier in a package option is often better. A modifier is set after the language name, and is prefixed with a dot (only when the language is set as package option – neither global options nor the main key accept them).

#### 3 User's commands

In a multilingual document, some typographic rules are language dependent and should apply to the whole document.

Regarding local typography, the macro \selectlanguage{russian} switches to the Russian language, with the following effects:

- 1. Russian hyphenation patterns are made active;
- 2. \today prints the date in Russian;
- 3. the caption names are translated into Russian;
- 4. emdash typed by the ligature --- might be 20% shorter when Russian is the current language; the result depends on the current encoding; --- always produce long emdash in LuaTeX and XeTeX since these engines use same encodings for all languages;
- 5. emdash typed by the ligature "--- in Russian is 20% shorter, however the ligature "--- might not be defined in other languages; a shorter emdash (i.e. \cyrdash) can be typeset in any language using special macros enlisted in table 1.

By default, a modern spelling is used for built-it strings (caption names) and the date. The spelling can be reverted to ancient by setting the language attribute to ancient in the document preamble as discussed in Sec. 2.4.

Since Russian has its own numbering system, russianb.ldf adds macros  $\asbuk\{\langle counter \rangle\}\$  and  $\Asbuk\{\langle counter \rangle\}\$  for formatting numbers appropriately the alphabetic sequence in the Russian alphabet. Additional commands are provided to typeset quotes:

- 1. French quotation marks can be entered using the commands \guillemotleft and \guillemotright which work in  $\LaTeX$  2 $\varepsilon$  and PlainTeX.
- 2. German quotation marks can be entered using the commands  $\graphi$  and  $\graphi$  which work in  $\arrowvert \graphi$  and  $\arrowvert \graphi$  and  $\arrowvert \graphi$  and  $\arrowvert \graphi$  which work in  $\arrowvert \graphi$  and  $\arrowvert$

The macro \Russian is now defined as an alias for \selectlanguage{russian}, and its "opponent" \English, existed in russianb.ldf prior to version 1.2 has been removed since the Russian language definition file is wrong place for definition of macros which switch to a distinct other language.

The macro  $\text{textcyrillic}(\langle \text{text} \rangle)$  is intended to typeset small chunks of text in Russian; it is essentially an alias for  $\text{foreignlanguage}\{\text{russian}\}\{\langle \text{text} \rangle\}$ .

#### 3.1 Active character

Table 1 shows macros and active string which can be used to typeset various dashes and quotes. In the Russian language, the character "is made active. It can be considered as second escape character in addition to \. Some dashes and all quotes can be typed using both active character "and ordinary macros as indicated in the table. However, some shorthanded hyphenations have no macro counterpart.

Note that the standard soft hyphen \- is equivalent to \babelhyphen\*{soft}.

The quotation marks traditionally used in Russian were borrowed from other languages (e.g., French and German) so they keep their original names.

The French quotes are also available as ligatures '<<' and '>>' in 8-bit Cyrillic font encodings (LCY, X2, T2\*) and in Unicode encoding (TU) as '<' and '>' characters in 7-bit Cyrillic font encodings (OT2 and LWN).

In Unicode encoding TU cyrdashes and quotes can be typed as single character if your text editor allows inserting characters which absent of standard keyboard. This method works as well for 8-bit fonts encoded according to T2A if source file is encoded with cp1251 or utf8.

By default, active double quote is switched on. It can be switched off any time using \shorthandoff{''} and the switched on again using \shorthandon{''}. The aliases \mdqoff and \mdqon for these two macros has been removed from russianb.ldf starting from version 1.3 in favour of the macros \shorthandon and \shorthandoff provided in the babel core.

#### 3.2 Math commands

russianb.ldf defines few macros than can be used independently of current language. These are 9 macros to be used in math mode to type the names of trigonometric functions common for Russian documents: \sh, \ch, \tg, \ctg, \arctg, \arctg, \th, \cth, and \cosec. Cyrillic letters in math mode can be typed with the aid of text commands such as \textbf, \t

The macros  $\P$ rob,  $\P$ rob,  $\P$ nod,  $\P$ nod,  $\P$ nok,  $\P$ roj print some rare Russian mathematical symbols.

#### 4 Customisation

Starting with the version 1.3m, the definition of the \cyrdash command has been changed. Recall that \cyrdash prints the Cyrillic dash and is called by the shorthands listed above in the table. Now \cyrdash is defined as an alias of the \textendash vommand, which is available in all font encodings. If you agree with some modern tendencies that the length of the \textendash dash is too long, change the \cyrdash command at your choice. Recommended method is shown in the example below:

```
\usepackage{graphicx}
\usepackage[english,russian]{babel}
\renewcommand{\cyrdash}{\scalebox{0.75}[1]{\textemdash}}}
```

Note that such a definition assumes that the package graphicx is also loaded. The shown above definition partially mimics the state of arts which has been existed for many years for 8-bit engines but it ensure that the Cyrillic dash is 25% shorter than the em-dash for any family of fonts, not only CM fonts especially designed for legacy LATEX.

As explaned in the Implementation section, the \@Bcdash command invoked ny the shorthand "--" prints the Cyrillic dash in compound names of theorems, laws, equations, companies, e.t.c. composed of the names of two or more people. By default, \@Bcdash adds no spaces around the dash. Some publishers recommend to add 2pt spaces on both sides of the dash in compound names. If you wish to follow such an advice, redefine the \@Bcdash command as shown below:

```
\usepackage[english,russian]{babel}
\makeatletter
\def\@Bcdash{\leavevmode\ifdim\lastskip>\z@\unskip\fi
\nobreak\kern2\p@\cyrdash\penalty\exhyphenpenalty\hskip2\p@\ignorespaces}%
\makeatother
```

Note that there is no consensus on what should be the spaces around the dash in compound names. Although 2pt spaces are recommended by many publishers, they make the dash in compound names hardly distinguishable from regular dash is other parts of the text. As a palliative solution, you can limit yourself to 1pt spaces:

```
\usepackage[english,russian]{babel}
\makeatletter
\def\@Bcdash{\leavevmode\ifdim\lastskip>\z@\unskip\fi
\nobreak\kern\p@\cyrdash\penalty\exhyphenpenalty\hskip\p@\ignorespaces}%
\makeatother
```

Compound names composed of names of two or more people should be distinguished from double names of single person such as Jean-Jacques Rousseau or Nemirovich-Danchenko, which instead of a dash should be written with a hyphen without spaces around it.

See discussion at Тире между фамилиями людей.

#### 5 TeXnical details

The packages inputenc and luainputenc make Cyrillic letters active so that a compiler converts them into corresponding \cyr... macro at compilation time. For example, Russian letter 'a' matches macro \cyra, and capital Russian letter 'A' matches \cyra. The package fontenc then matches every macro \cyr... to corresponding glyph in a font file depending on a declared font encoding.

Nowadays, Unicode makes \cyr... macros outdated since both source file and font file are encoded consistently. These macros should therefore be removed because mixing them with Unicode characters breaks sorting mechanism of such

utilities as bibtex and makeindex. For the sake of backward compatibility, \cyr... are still kept for LATEX, but they are bypassed if LuaLATEX or XeLATEX are detected.

Some inconsistences of prior versions of russianb.ldf was also overcame in the version 1.2. Those users who used \selectlanguage macro, defined in the core babel system, to switch between different languages should not worry. However, the macros \Russian, \Englsih and their aliases \Rus, \cyr, \Eng are modified or removed as they did not conform the mechanism of language switching encoded into the core of babel and therefore can mess it.

### 6 Known problems

Before switching from a legacy 8-bit engine (latex, pdflatex) to an Unicode engine (xelatex, lualstex) and vise versa delete all .aux, .toc, .lot, .lof files as they might have stored incompatible internal encodings.

T2\* font encodings do not have old Slavonic letter 'yat' (Ѣ, ₺), which is hard-coded in ancient caption names. Be sure to use an Unicode engine or borrow \cyryat and \CYRYAT commands from X2 font encoding when setting the language attribute to "ancient", for example:

```
\usepackage[X2,T2A]{fontenc}
\usepackage[utf8]{inputenc}
\DeclareUnicodeCharacter{0462}{\CYRYAT}
\DeclareTextSymbolDefault{\CYRYAT}{X2}
\DeclareUnicodeCharacter{0463}{\cyryat}
\DeclareTextSymbolDefault{\cyryat}{X2}
\usepackage[english,russian.ancient]{babel}
```

None of Cyrillic font encoding has 'iotated E' ( $\mathbb{H}$ ,  $\mathbb{H}$ ). When running legacy engines you are advised to substitute it with \CYRIE, \cyrie ( $\mathbb{H}$ ,  $\mathbb{H}$ ):

```
\DeclareUnicodeCharacter{0464}{\CYRIE}
\DeclareUnicodeCharacter{0465}{\cyrie}
```

The dash might change its length after switching the current language with \selectlanguage. Legacy engines (latex.exe, pdflatex.exe) take the dash symbol (—) from same code point 22 of a font file but from different fonts for Cyrillic and Latin languages. Cyrillic fonts take care that Cyrillic dash is 20% shorter than Latin one. Unicode engines (xelatex.exe, lualatex.exe) take the dash from the code point x2022, but may substitute the font dash with fake symbol which is shorter. See discussion at https://tex.stackexchange.com/questions/294178/whatabout-cyrdash-in-eu1-and-eu2-encodings.

## 7 Implementation

#### 7.1 Initial setup

The macro \LdfInit performs a couple of standard checks that must be made at the beginning of a language definition file, such as checking the category code of the @-sign, preventing the .ldf file from being processed twice, etc.

```
1 \ProvidesLanguage{russian}
```

<sup>2 [2020/09/09 1.3</sup>k Russian support for the Babel system]

#### 3 \LdfInit{russian}{captionsrussian}

First, we check if LualateX or XelateX is running. If so, we set boolean key \if@uni@ode to true. It will be used to eliminate \cyr... commands, which were introduced in lateX2e to handle various Cyrillic input encoding. With the advent of Unicode lateX is moving to universal input encoding, so we consider these \cyr... commands as obsolete. They are preserved though for backward compatibility in case if lateX or PDFlateX are running.

We don't load the ifluatex or ifxetex package because \RequirePackage is not allowed at the stage of processing options (note that babel loads this file right when it processes its own options) but we borrow code from these packages.

```
4 \ifdefined\if@uni@ode
5 \PackageError{babel}{if@uni@ode already defined.\MessageBreak
6 Please contact author of russianb.ldf}
7 \relax
8 \fi
9 \newif\if@uni@ode
10 \ifdefined\luatexversion \@uni@odetrue \else
11 \ifdefined\XeTeXrevision \@uni@odetrue \fi\fi
```

Check if hyphenation patterns for the Russian language have been loaded in language.dat. Namely, we check for the existence of \lorussian. If it is not defined, we declare Russian as dialect for the default language number 0 which almost for sure is English.

```
12 \ifx\l@russian\@undefined
13 \@nopatterns{Russian}
14 \adddialect\l@russian0
15 \fi
```

Now \lorussian is always defined.

#### 7.2 Output encoding

We need to know font encoding that is supposed to be active at the end of the babel package. Default font encoding, set by LATEX core, is OT1. This can be changed by the fontenc package in case of LATEX and by fontspec package in case of LualATEX. It matters weather these packages are loaded before of after babel. In the latter case or if these packages are not loaded at all, russianb.ldf ignores their effect and tries to provide some reasonable settings. In particular, T2A will be selected for Russian language if LATEX is running but TU in case of XelATEX or LualATEX.

\latinencoding

The macro \latinencoding keeps the name of Latin encoding. It is defined in babel.def and is wrapped into \AtBeginDocument to allow for late loading fontenc. Therefore it does not matter whether babel is loaded before or after the fontenc. As of version 1.2, definition of \latinencoding was removed from russianb.ldf since it is overruled in babel.def. For example, after

```
\usepackage[T1,T2A]{fontenc}
\usepackage[english,russian]{babel}
```

as well as after

```
\usepackage[english,russian]{babel}
\usepackage[T1,T2A]{fontenc}
```

\latinencoding will be set to T1. After

```
\usepackage[english,russian]{babel}
```

\latinencoding will be OT1.

In Unicode mode, the package fontspec should be loaded instead of fontenc to make font preparation; fontspec sets current encoding (kept in \cf@encoding) to TU, and the babel package sets the macro \latinencoding to \cf@encoding. Since babel scan for value \cf@encoding within \AtBeginDocument, \latinencoding will be set to TU for XeLATEX or LuaLATEX no matter which of the packages, babel or fontspec is loaded first.

\cyrillicencoding

There is a limited list of encodings appropriate for Cyrillic text. We will look which of them is declared and keep its name in the macro \cyrillicencoding. Correct (but obsolete and now deleted) 7-bit Cyrillic encoding is LWN. Correct 8-bit Cyrillic encodings are T2A (default for 8-bit compilers), T2B, T2C, LCY and X2. Correct utf8 encodings are TU (default for Xelfex and Lualfex), EU1 (obsolete, formerly used for Xelfex), EU2 (obsolete, formerly used for Lualfex).

In 8-bit (LATEX) mode, user may choose between different non-unicode Cyrillic encodings—e.g., X2 or LCY. If user wants to use another font encoding rather than default (T2A), he has to load the corresponding file before babel.sty.

Remember that for the Russian language, the T2A encoding is better than X2, because X2 does not contain Latin letters, and users should be very careful to switch the language every time they want to typeset a Latin word inside a Russian phrase or vice versa.

We parse the \cdp@list containing encodings known to LATEX in the order they have been loaded by the time babel is called. We set the \cyrillicencoding to the last loaded encoding in the list of supported Cyrillic encodings: OT2, LCY, X2, T2C, T2B, T2A. In Unicode mode, \cyrillicencoding is set to TU by fontspec. Nevertheless here we provide similar definitions; 8-bit encodings are kept for Unicode compilers (LualATEX and XeLATEX) since they can run in compatibility (8-bit) mode.

```
16 \def\@setcyrillicencoding{%
17
    \def\sce@a##1##2{%
      \edef\sce@b{##1}%
18
      \egg(\#2)\%
19
20
      \ifx\sce@b\sce@c
        \let\cyrillicencoding\sce@c
21
      \fi}%
22
    \def\cdp@elt##1##2##3##4{%
23
24
      \sce@a{##1}{OT2}%
      \sce@a{##1}{LCY}%
25
26
      \sce@a{##1}{X2}%
27
      \sce@a{##1}{T2C}%
28
      sce@a{##1}{T2B}%
29
      sce@a{##1}{T2A}%
30
      \if@uni@ode
```

```
%\sce@a{##1}{EU1}%
31
        %\sce@a{##1}{EU2}%
32
        \sce@a{##1}{TU}%
33
      fi}%
34
    \cdp@list
35
36 }
37 \ifx\cyrillicencoding\undefined
    \@setcyrillicencoding
39 \fi
40 \@onlypreamble\@setcyrillicencoding
41 \@onlypreamble\sce@a
42 \@onlypreamble\sce@b
43 \@onlypreamble\sce@c
```

The last lines are to free the memory occupied by the macros \@setcyrillicencoding and \sce@x that are useless in the document. The contents of \@begindocumenthook is cleared automatically.

If \cyrillicencoding is still undefined, we issue warning and provide reasonable default value for \cyrillicencoding. We then load default encoding definitions; we use the lowercase names (i.e., lcyenc.def instead of LCYenc.def) when we do that

```
44 \ifx\cyrillicencoding\undefined
   \if@uni@ode
      %\ifdefined\XeTeXrevision
46
      % \edef\cyrillicencoding{EU1}
47
      %\else\ifdefined\luatexversion
48
      % \edef\cyrillicencoding{EU2}
49
      %\fi\fi
50
      \edef\cyrillicencoding{TU}
51
    \else
52
53
      \edef\cyrillicencoding{T2A}
54
    \fi
55
    \PackageWarning{babel}%
      {No Cyrillic font encoding has been loaded so far.\MessageBreak
56
       A font encoding should be declared before babel.\MessageBreak
57
       Default '\cyrillicencoding' encoding will be loaded
58
59
    \lowercase\expandafter\\expandafter\input\cyrillicencoding enc.def\relax}%
```

As a final wisdom, we repeat \@setcyrillicencoding at \begin{document} time. We could not avoid previous call to \@setcyrillicencoding since compiler scan .aux file before it executes delayed code, and .aux may contain \set@langauge{russian}; the latter rises an error if \cyrillicencoding would not be defined by that time.

```
 \begin{array}{ll} \textbf{61} & \texttt{\AtBeginDocument}(\texttt{\Qsetcyrillicencoding}) \\ \textbf{62 \fi} \end{array}
```

\Russian For the sake of backward compatibility we keep the macro \Russian but redefine its meaning; now \Russian is simply an alias for \selectlanguage{russian}.

63 \DeclareRobustCommand{\Russian}{\selectlanguage{russian}}

\cyrillictext We define \cyrillictext and its alias \cyr but remove another alias \Rus; these \cyr

macros are intended for use within babel macros and do not perform complete switch of the language.

In particular, they to do no switch captions and the name of current language stored in the macro \languagename. This inconsistency might break some assumptions embedded into babel's. For example, the \iflamguage macro will fail.

Second, \cyrillictext does not activate shorthands, so that "<, ">, "', ", ", ", ", e.t.c. will not work.

And third, \cyrillictext does not write its trace to .aux file, which might result in wrong typesetting of table of content, list of table and list of figures in multilingual documents.

Due to any of these reasons the use of the declaration \cyrillictext and its aliases in ordinary text is strongly discouraged. Instead of the declaration \cyrillictext it is recommended to use \Russian or the command \foreignlanguage defined in the babel core; their functionality is similar to \selectlanguage{russian} but they did not switch caption names, dates and shorthands.

```
64 \DeclareRobustCommand{\cyrillictext}{%
65 \fontencoding\cyrillicencoding\selectfont
66 \let\encodingdefault\cyrillicencoding
67 \expandafter\set@hyphenmins\russianhyphenmins
68 \language\l@russian}%
```

69 \let\cyr\cyrillictext

Since version v.1.2, the \English macro and its alias \Eng were removed as a reasonable place for defining these macros would be englishb.ldf. Note also that these macros are absent from russianb.ldf's counterpart of the package polyglossia, analog of babel for XelaTrX.

```
70 %%\DeclareRobustCommand{\English}{%
71 %% \fontencoding\latinencoding\selectfont
72 %% \let\encodingdefault\latinencoding
73 %% \expandafter\set@hyphenmins\englishhyphenmins
74 %% \language\l@english}%
75 %%\let\Eng\English
```

The macro \cyrillictext switches current (e.g., Latin) font encoding to a Cyrillic font encoding stored in \cyrillicencoding. The macro \latintext switches back. This method assumes that main font encoding is a Latin one. But, in fact, the latter assumption does not matter if any other language is switched on using same method, i.e. if corresponding .ldf file defines required macros to switch that language on from same standard (Latin) state. Since \latintext is defined by the core of babel we do not repeat its definition here.

```
76 %%\DeclareRobustCommand{\latintext}{%
77 %% \fontencoding{\latinencoding}\selectfont
78 %% \def\encodingdefault{\latinencoding}}
79 %%\let\lat\latintext
```

#### \textcyrillic $\{\langle \text{text} \rangle\}$

The macro \textcyrillic takes an argument which is then typeset using the \textcyrillictext declaration.

 $80 \label{lem:command} $$80 \DeclareTextFontCommand{\text{\cyrillic}}(\cyrillictext)$$ 

NEXT CHUNK OF CODE SHOULD BE MOVED TO X2enc.def, X2enc.dfu, IF NEEDED.

Since the X2 encoding does not contain Latin letters, we should make some redefinitions of LATEX macros which implicitly produce Latin letters. Unfortunately, the commands \AA and \aa are not encoding dependent in LATEX (unlike e.g., \oe or \DH). They are defined as \r{A} and \r{a}. This leads to unpredictable results when the font encoding does not contain the Latin letters 'A' and 'a' (like X2).

```
81 %%\expandafter\ifx\csname T@X2\endcsname\relax\else 82 %% \DeclareTextSymbolDefault{\AA}{0T1} 83 %% \DeclareTextSymbolDefault{\aa}{0T1} 84 %% \DeclareTextCommand{\aa}{0T1}{\r a} 85 %% \DeclareTextCommand{\AA}{0T1}{\r A} 86 %%\fi
```

#### 7.3 Input encoding

We do not assume any default input encoding of the source file, so the inputenc package should be explicitly loaded by \usepackage[...]{inputenc} before babel. Note that default font encoding T2A for legacy 8-bit latex engines fits well enough to Russian version of Windows ANSI encoding which is almost equivalent to cp1251 input encoding.

Should we wrap this chunk into AtBeginDocument? Note also that inputenc has its own check whether it is correctly called. Also, it is difficult to imagine that TU encoding is not declared in case of unicode engines. Hence, we remove this check in babel starting since version 1.3j.

```
87 %%\@ifpackageloaded{inputenc}{%
88 %%% \if@uni@ode
89 %%%
         \PackageWarning{babel}{inputenc should not be used with LuaTeX or XeTeX}
90 %%% \fi
91 %% \ifdefined\luatexversion
       \PackageWarning{babel}{inputenc should not be used with LuaTeX}
92 %%
93 %% \fi}{%
      %\def\reserved@a{LWN}%
94 %%
      %\ifx\reserved@a\cyrillicencoding\else
95 %%
96 %%
         \def\reserved@a{OT2}%
97 %%
         \ifx\reserved@a\cyrillicencoding\else
98 %%
            \def\reserved@a{TU}%
99 %%
            \ifx\reserved@a\cyrillicencoding\else
100 %%
              \PackageWarning{babel}%
101 %%
                {No input encoding specified for Russian language}
102 %%
        \fi\fi
103 %%
      %\fi
104 %%}
```

#### 7.4 Shorthands

The double quote character "is declared to be active in Russian language.

```
105 \initiate@active@char{"}
```

\mdqon Obsolete: Active double quote can be both activated and deactivated at any time \mdqoff using the macros \mdqoff.

```
106 %%\def\mdqon{\bbl@activate{''}}
107 %%\def\mdqoff{\bbl@deactivate{''}}
Initial activation state is set in section 7.5.4.
```

\dq The active character "is used as indicated in table 1. We save the original double quote character in the \dq macro to keep it available. The math accent \" can

```
108 \begingroup \catcode'\''12
109 \def\reserved@a{\endgroup
110 \def\@SS{\mathchar''7019 }
111 \def\dq{''}}
```

#### 7.4.1 Quotes

112 \reserved@a

now be typed as "".

We set "and as shorthands for \quotedblbase and \textquotedblleft, respectively. Prior to ver.1.2, these shorthands were defined through German quotes \glqq and \grqq, which in their turn are defined in babel.def via \quotedblbase and \textquotedblleft, respectively. It occurred, that old definition caused errors in Unicode mode if fontspec is loaded.

Prior to version 1.2, the shorthands "< and "> had been declared to be equivalents for the French quotes \flqq and \frqq, respectively. They are defined in babel.def via \guillemotleft and \guillemotright. However, \flqq and \guillemotleft (and their right counterparts) are typeset differently if current encoding is not T1. Therefore, since v.1.2, we define "< and "> directly through \guillemotleft and \guillemotright.

```
113 \declare@shorthand{russian}{""}{\quotedblbase}
114 \declare@shorthand{russian}{""}{\textquotedblleft}
115 \declare@shorthand{russian}{"<}{\guillemotleft}
116 \declare@shorthand{russian}{">}{\guillemotright}
```

Next set of shorthands is intended for variations of standard macro \- which indicates explicitly breakpoint for hyphenation in a word. Meaning of these shorthands is explained in table 1.

Some of this definitions need a alternative definitions for the booksmarks.

```
117 \providecommand\texorpdfstring[2]{#1}
118 \declare@shorthand{russian}{'""}{\hskip\z@skip}
119 \declare@shorthand{russian}{'""}{\texorpdfstring{\textormath{\leavevmode\hbox{-}}{-}}}{-}}\
120 \declare@shorthand{russian}{'""=}{\nobreak-\hskip\z@skip}
121 \declare@shorthand{russian}{'"|}{%
122 \texorpdfstring{%
123 \textormath{\nobreak\discretionary{-}}{\kern.03em}\allowhyphens}{}}}
```

#### 7.4.2 Emdash, endash and hyphenation sign

To distinguish between "-- and "--- we must check whether the next token after - is a hyphen character. If it is, we output an emdash, otherwise a hyphen sign.

Therefor TEX looks for the next token after the first '-', writes its meaning to \russian@sh@next and finally call for \russian@sh@tmp.

```
124 \declare@shorthand{russian}{"-}{%
125 \texorpdfstring{\def\russian@sh@tmp{%
126 \if\russian@sh@next-\expandafter\russian@sh@emdash
127 \else\expandafter\russian@sh@hyphen\fi}%
128 \futurelet\russian@sh@next\russian@sh@tmp}{-}}
```

Two macros \russian@sh@hyphen and \russian@sh@emdash called by \russian@sh@tmp are defined below. The second of them has two parameters since it must gobble next two hyphen signs.

```
129 \def\russian@sh@hyphen{\nobreak\-\bbl@allowhyphens}
130 \def\russian@sh@emdash#1#2{\cdash-#1#2}
```

\cdash In its turn, \russian@sh@emdash simply calls for \cdash which has rich use. It analyses 3rd of 3 characters and calls for one of few predefined macros \@Acdash, \@Bcdash, \@Ccdash.

```
131 \def\cdash#1#2#3{\def\tempx@{#3}%
132 \def\tempa@{-}\def\tempb@{~}\def\tempc@{*}%
133 \ifx\tempx@\tempa@\@Acdash\else
134 \ifx\tempx@\tempb@\@Bcdash\else
135 \ifx\tempx@\tempc@\@Ccdash\else
136 \errmessage{Wrong usage of cdash}\fi\fi\fi}
```

All these 3 internal macros call for \cyrdash, which types Cyrillic emdash, but put different spaces around the dash.

**\@Acdash** is invoked by "---. It types Cyrillic emdash to be used inside a text and puts an unbreakable thin space before the dash if a space is placed before "--- in the source file; can be used after display maths formulae, formatted lists, enumerations, etc.

```
\label{limination} $$137 \end{\endown} \align{\endown} \alig
```

\@Bcdash is invoked by "--". It types Cyrillic emdash in compound terms (like law of Mendeleev—Klapeiron). Compound names composed of names of two or more people should be distinguished from double names of single person (Jean-Jacques Rousseau, Nemirovich-Danchenko), in which words are separated by a hyphen. There is no consensus on how the dashes should be used in compound names. Some editors advise that no spaces should be inserted around the dash. However, most editors require you to insert 2pt-spaces on both sides of the dash. The first option is implemented in this package since the very old versions. The second option can be implemented as described in the Customisation section.

```
139 \def\@Bcdash{\leavevmode\ifdim\lastskip>\z@\unskip\fi
140 \nobreak\cyrdash\penalty\exhyphenpenalty\hskip\z@skip\ignorespaces}%
141 %\def\@Bcdash{\leavevmode\ifdim\lastskip>\z@\unskip\fi
142 % \nobreak\kern2\p@\cyrdash\penalty\exhyphenpenalty\hskip2\p@\ignorespaces}%
\@Ccdash is invoked by "--*. It denotes direct speech and adds small space
```

\@Ccdash is invoked by "--\*. It denotes direct speech and adds small space after the dash.

```
143 \def\@Ccdash{\leavevmode
144 \nobreak\cyrdash\nobreak\hskip.35em\ignorespaces}%
```

Finally, we define a shorthand thin space to be placed between initials as in D.", Mendeleev. When used instead of  $\$ , as in D. $\$ , Mendeleev it allows hyphenation in the next word.

145 \declare@shorthand{russian}{",}{\nobreak\hskip.2em\ignorespaces}

\cyrdash

The \cyrdash macro is defined in Cyrillic font encodings (LCY, T2\*, OT2, and X2) by means of \DeclareTextSymbol. In T2\* encodings \cyrdash refers to same code point 22 as \textemdash does so that these two macros are equivalent. However the dash at the code point 22 have different length in different fonts. The dash in Cyrillic fonts LH is 20% shorter as compared to Latin fonts such as CM (Computer Modern). As a result, the dash typed by the ligature --- or its variations mentioned in Table 1 might change its length after \selectlanguage.

The \cyrdash macro is not available in Latin encodings, such as T1, or in the Unicode TU encoding intended for the xelatex and lualatex engines. Therefore, an explicit or implicit call to the command \cyrdash in a situation when the current language differs from Russian, causes an error. For such cases, we provide a fake default using the \ProvideTextCommandDefault method.

Prior to version 1.3l inclusive, the fake for \cyrdash was defined as a compound character {\hbox to.8em {--\hss--}} in the case when the current language is Russian; in other cases, \cyrdash is equated to \textendash. Thus, for the Russian language, the command \cyrdash prints a dash 0.8em wide. With the variety of fonts that the xelatex and lualatex compilers allow, the usual dash that the \textendash command prints can have a width of either more than 1em or less than 1em. Consequently, the statement that the Cyrillic dash is 20 percent shorter than the Latin one loses its meaning. In addition, this statement does not find convincing confirmation in the specialized literature for editors of publishing houses. In this regard, it was decided to equate \cyrdash with \textendash.

```
146 \PackageInfo{babel}{Default for \string\cyrdash\space is provided}
147 \%\ProvideTextCommandDefault{\cyrdash}{\iflanguage{russian}\%
148 \%\ {\hbox to.8em{--\hss--}}{\textemdash}}
149 \ProvideTextCommandDefault{\cyrdash}{\textemdash}
```

With this definition of \cyrdash, the dash width is entirely determined by the selected font. However, it is believed that the dash length in many fonts is too large. Those who adhere to such a bud of vision can change the definition of the \cyrdash command by placing the declaration \renewcommand{\cyrdash} {\scalebox{0.75}[1]{\textemdash}} somewhere after the call to the babel package. Unfortunately, such a definition of the \cyrdash command cannot be used inside current package, since the command \scalebox is defined in the graphicx package.

#### 7.5 Switching to/from Russian

Now we define additional macros used to reset current language to Russian and back to some original state. The package babel based on the assumption that original state is characterized by a Latin encoding. Previously, for back reset the macro \OriginalTeX was used, but now use \latintext for the same purpose.

#### 7.5.1 Caption names

First, we define Russian equivalents for Russian caption names.

#### \captionsrussian

The macro \captionsrussian defines caption names used in the four standard document classes provided with LaTeX. The macro \cyr activates Cyrillic encoding. It could be dropped if we would be sure that Russian captions are called only if current language is Russian. However, the macros such as \Russian do not conform to strict rules of the package babel as explained in the above.

As of version v.1.2 we eliminate \cyr... macros from caption names if Unicode engine is running. In the latter case, Cyrillic letters are typed in by their Unicode code-points, the anabed notation is not used since it causes error at compilation time in case if LATEX is running and utf8 input encoding is not declared.

#### 150 \if@uni@ode 151 %\captionsrussian@modern \addto\captionsrussian{% \def\prefacename{Предисловие}% [babel] 153 \def\refname{Список литературы}% [only article] 154 155 \def\abstractname{Аннотация}% [only article, report] 156 \def\bibname{Литература}% [only book, report] 157 \def\chaptername{Глава}% [only book, report] $\def \appendixname{Приложение}%$ 158

Note that two names for the Table of Contents can be used in Russian publications. For books (and reports) the second variant is appropriate, but for proceedings the first variant is preferred:

```
159
      \@ifundefined{thechapter}
160
         {\def\contentsname{Содержание}}%
161
        {\def\contentsname{Оглавление}}%
162
      \let\tocname=\contentsname
      \def\listfigurename{Список иллюстраций}%
163
      \def\listtablename{Список таблиц}%
164
      \def\indexname{Предметный указатель}%
165
      \def\authorname{Именной указатель}%
166
      \def\figurename{Рис.}%
167
      \def\tablename{Таблица}%
168
      \def\partname{Часть}%
169
      \def\enclname{вкл.}%
170
      \def\ccname{исх.}%
171
172
      \def\headtoname{bx.}%
      \def\pagename{c.}%
                                        [letter]
173
      \def\seename{см.}%
174
      \def\alsoname{cm.\ также}%
175
      \def\proofname{Доказательство}%
                                        [amsthm]
176
      \def\glossaryname{Словарь терминов}%
177
178
      \def\acronymname{Аббревиатуры}%
                                        [glossaries] {Acronyms}
179
      \def\lstlistingname{Листинг}%
                                        [listings] (the environment) {Listing}
      \def\lstlistlistingname{Листинги}% [listings] (the "List of") {Listings}
180
      \def\notesname{Заметки}%
                                        [endnotes] {Notes}
181
182
Additional definitions for the package nomencl:
    %% nomencl
184
    \ifdefined\nomname
185
      \addto\captionsrussian{%
186
```

\def\nomname{Обозначения}%

187

```
\def\eqdeclaration#1{, cm.\nobreakspace(#1)}%
188
           \def\pagedeclaration#1{, ctp.\nobreakspace#1}%
189
       }%
190
     \fi
191
Additional captions for the revtex class.
     %% RevTeX4 & RevTeX4-1
193
194
     %%\@ifclassloaded{revtex4-1}
195
     %%{<true code>}
     %%{<false coode>}%
196
     %\@ifclassloaded{revtex4-1}
197
198
     \label{lem:condense} $$ \inf \mathbb{C}_{0,0}(0) = \mathbb{C}_{0,0}. $$ \left( \mathbb{C}_{0,0} \right) $$
199
200
       \addto\captionsrussian{%
       \def\lofname{\listfigurename}
201
       \def\lotname{\listtablename}
202
       \def\figuresname{Рисунки}%{Figures}%
203
       \def\tablesname{Таблицы}%{Tables}%
204
       \def\appendixesname{Приложения}%{Appendixes}%
205
206
       \def\acknowledgmentsname{Благодарности}%{Acknowledgments}
207
       \def\andname{и}%{and}
208
       \def\@pacs@name{PACS коды: }%{PACS numbers: }%
209
       \def\@keys@name{Ключевые слова: }%{Keywords: }%
210
       \def\Dated@name{Дата: }%{Dated: }%
       \def\Received@name{Получено }%{Received }%
211
       \def\Revised@name{Исправленная версия }%{Revised }%
212
       \def\Accepted@name{Принято }%{Accepted }%
213
       \def\Published@name{Опубликовано }%{Published }%
214
       }%
215
216
     %}{}%
217
    Now we proceed to the ancient version in Unicode encoding.
     \addto\captionsrussian@ancient{%
218
       \def\prefacename{Предисловіе}%
219
220
       \def\refname{Примьчанія}%
221
       \def\abstractname{Аннотація}%
       \def\bibname{Библіографія}%
       \def\chaptername{Глава}%
223
224
       \def\appendixname{Приложеніе}%
225
       \@ifundefined{thechapter}
226
         {\def\contentsname{Содержаніе}}%
         {\def\contentsname{Оглавленіе}}%
227
       \let\tocname=\contentsname
228
       \def\listfigurename{Списокъ иллюстрацій}%
229
       \def\listtablename{Списокъ таблицъ}%
230
231
       \def\indexname{Предмьтный указатель}%
       \def\authorname{Именной указатель}%
232
       \def\figurename{Рис.}%
233
       \def\tablename{Таблица}%
234
235
       \def\partname{Часть}%
236
       \def\enclname{вкл.}%
       \def\ccname{исх.}%
237
       \def\headtoname{\Bx.}\%
238
```

```
\def\pagename{c.}%
239
       \def\seename{cm.}%
240
       \def\alsoname{cm.~takxe}%
241
       \def\proofname{Доказательство}%
242
       \def\glossaryname{Словарь терминов}%
243
       \def\acronymname{Аббревиатуры}%
244
       \def\lstlistingname{Листинг}%
245
       \def\lstlistlistingname{Листинги}%
246
247
      %\ifdefined\nomname
      % see http://old_russian.academic.ru/8433/%D0%BE%D0%B1%D1%8A%CB%AB%D0%B0%D0%B2%D0%BB%D0%B
248
         \def\nomname{0бозначенія}%{0бъавлению}% <-- #0465
249
      %\fi
250
       \def\notesname{Заметки}%
251
252
    253
    %% RevTeX4 & RevTeX4-1
254
    %\@ifclassloaded{revtex4-1}
255
    %{%
256
     \ifnum\@ifclassloaded{revtex4}{1}{\@ifclassloaded{revtex4-1}{1}{0}}>0
257
258
       \addto\captionsrussian@ancient{%
       \def\lofname{\listfigurename}
259
       \def\lotname{\listtablename}
260
       \def\figuresname{Рисунки}%{Figures}%
261
       \def\tablesname{Таблицы}%{Tables}%
262
263
       \def\appendixesname{Приложения}%{Appendixes}%
264
       \def\acknowledgmentsname{Благодарности}%{Acknowledgments}
       \def\andname{и}%{and}
265
       \def\@pacs@name{PACS коды: }%{PACS numbers: }%
266
       \def\@keys@name{Ключевые слова: }%{Keywords: }%
267
       \def\Dated@name{Дата: }%{Dated: }%
268
       \def\Received@name{Получено }%{Received }%
269
       \def\Revised@name{Исправленная версия }%{Revised }%
270
       \def\Accepted@name{Принято }%{Accepted }%
271
       \def\Published@name{Опубликовано }%{Published }%
272
273
      }%
274
    %}{}%
275
     \fi
    %% =
          _____
277 \else
278
    %\def\captionsrussian@modern{%
279
     \addto\captionsrussian{%
280
       \def\prefacename{%
         {\cyr\CYRP\cyrr\cyre\cyrd\cyri\cyrs\cyrl\cyro\cyrv\cyri\cyre}}%
281
       \def\refname{%
282
         {\cyr\CYRS\cyrp\cyri\cyrs\cyro\cyrk\
283
         \cyrl\cyri\cyre\cyrr\cyra\cyrt\cyru\cyrr\cyrery}}%
284
285
       \def\abstractname{%
         {\cyr\CYRA\cyrn\cyrn\cyro\cyrt\cyra\cyrc\cyri\cyrya}}%
286
         \def\bibname{%
287
288
           {\cyr\CYRL\cyri\cyre\cyrr\cyra\cyrt\cyru\cyrr\cyra}}%
289
       \def\chaptername{{\cyr\CYRG\cyrl\cyra\cyrv\cyra}}%
290
       \def\appendixname{%
         {\cyr\CYRP\cyrr\cyri\cyro\cyrzh\cyre\cyrn\cyri\cyre}}%
291
292
       \@ifundefined{thechapter}%
```

```
293
        {\def\contentsname{%
          {\cyr\CYRS\cyro\cyrd\cyre\cyrr\cyrzh\cyra\cyrn\cyri\cyre}}}%
294
        {\def\contentsname{%
295
          296
       \let\tocname=\contentsname
297
       \def\listfigurename{%
298
        {\cyr\CYRS\cyrp\cyri\cyrs\cyro\cyrk
299
           \\cyri\cyrl\cyrl\cyryu\cyrs\cyrt\cyrr\cyra\cyrc\cyri\cyrishrt}}%
300
       \def\listtablename{%
301
         {\cyr\CYRS\cyrp\cyri\cyrs\cyro\cyrk
302
          \\cyrt\cyra\cyrb\cyrl\cyri\cyrc}}%
303
       \def\indexname{%
304
         {\cyr\CYRP\cyrr\cyre\cyrd\cyrm\cyre\cyrt\cyrn\cyrery\cyrishrt
305
          \\cyru\cyrk\cyra\cyrz\cyra\cyrt\cyre\cyrsftsn}}%
306
       \def\authorname{%
307
         {\cyr\CYRI\cyrm\cyre\cyrn\cyrn\cyro\cyrishrt
308
309
           \ \cyru\cyrk\cyra\cyrz\cyra\cyrt\cyre\cyrl\cyrsftsn}}%
       \def\figurename{{\cyr\CYRR\cyri\cyrs.}}%
310
       \def\tablename{{\cyr\CYRT\cyra\cyrb\cyrl\cyri\cyrc\cyra}}%
311
       \def\partname{{\cyr\CYRCH\cyra\cyrs\cyrt\cyrsftsn}}%
312
313
       \def\enclname{{\cyr\cyrv\cyrk\cyrl.}}%
       \def\ccname{{\cyr\cyri\cyrs\cyrh.}}%
314
       \def\headtoname{{\cyr\cyrv\cyrh.}}%
315
       \def\pagename{{\cyr\cyrs.}}%
316
       \def\seename{{\cyr\cyrs\cyrm.}}%
317
318
       \def\alsoname{{\cyr\cyrs\cyrm.\ \cyrt\cyra\cyrk\cyrzh\cyre}}%
       \def\proofname{{\cyr\CYRD\cyro\cyrk\cyra\cyrz\cyra\cyrt
319
320
         \cyre\cyr1\cyrsftsn\cyrs\cyrt\cyrv\cyro}}%
       \def\glossaryname{{\cyr\CYRS\cyrl\cyro\cyrv\cyra\cyrr\cyrsftsn\
321
322
         \cyrt\cyre\cyrr\cyrm\cyri\cyrn\cyro\cyrv}}%
323
       \def\acronymname{\CYRA\cyrb\cyrr\cyrr\cyrv\cyri\cyra\cyrt\cyru\cyrr\cyrery}%
       \def\lstlistingname{\CYRL\cyri\cyrs\cyrt\cyri\cyrn\cyrg}%
324
325
       \def\lstlistlistingname{\CYRL\cyri\cyrs\cyrt\cyri\cyrn\cyrg\cyri}%
       \def\nomname{\CYRO\cyrb\cyro\cyrz\cyrn\cyra\cyrch\cyre\cyrn\cyri\cyrya}%
326
       \def\notesname{\CYRZ\cyra\cyrm\cyre\cyrt\cyrk\cyri}%
327
328
    }%
329
    %% RevTeX4 & RevTeX4-1
     \ifnum \@ifclassloaded{revtex4}{1}{\@ifclassloaded{revtex4-1}{1}{0}}>0
332
       \addto\captionsrussian{%
333
       \def\lofname{\listfigurename}
334
       \def\lotname{\listtablename}
335
       \def\figuresname{\CYRR\cyri\cyrs\cyru\cyrn\cyrk\cyri}%{Figures}%
       \def\tablesname{\CYRT\cyra\cyrb\cyrl\cyri\cyrc\cyrery}%{Tables}%
336
       def\appendixesname{\CYRP\cyrr\cyri\cyrl\cyrc\cyrzh\cyre\cyrn\cyri\cyrya}%{Appendixes}\
337
       \def\acknowledgmentsname{\CYRB\cyr1\cyra\cyrg\cyro\cyra\cyrr\cyrn\cyro\cyrs\cyrt\cyr
338
339
       \def\andname{\cyri}%{and}
       \def\@pacs@name{PACS \cyrk\cyro\cyrd\cyrery: }%{PACS numbers: }%
340
       \def\@keys@name{\CYRK\cyrl\cyryu\cyrch\cyre\cyrv\cyrery\cyre\cyrs\cyrl\cyro\cyrv\cyra: }
341
342
       \def\Dated@name{\CYRD\cyra\cyrt\cyra: }%{Dated: }%
343
       \def\Received@name{\CYRP\cyro\cyrl\cyru\cyrch\cyre\cyrn\cyro }%{Received }%
```

\def\Accepted@name{\CYRP\cyrr\cyrn\cyrn\cyrya\cyrt\cyro }%{Accepted }%

\def\Revised@name{\CYRI\cyrs\cyrr\cyra\cyrv\cyr1\cyre\cyrn\cyra\cyrya\cyrya\cyrv\cyr

\def\Published@name{\CYRO\cyrp\cyru\cyrb\cyr1\cyri\cyrv\cyrv\cyrn\cyrn\cyro }%{Publis

344

345

346

```
}%
347
    \fi
348
    349
     \addto\captionsrussian@ancient{%
350
       \def\prefacename{%
351
         {\cyr\CYRP\cyrr\cyre\cyrd\cyri\cyrs\cyrl\cyro\cyrv\cyrii\cyre}}%
352
353
       \def\refname{%
         {\cyr\CYRP\cyrr\cyri\cyrm\cyryat\cyrch\cyra\cyrn\cyrii\cyrya}}%
354
                                                                                   <-- Примьчанія
       \def\abstractname{%
355
         {\cyr\CYRA\cyrn\cyrn\cyro\cyrt\cyra\cyrc\cyrii\cyrya}}%
356
357
       \def\bibname{%
         {\cyr\CYRB\cyri\cyrb\cyri\cyri\cyro\cyrg\cyrr\cyra\cyri\cyrii\cyrya}}% <-- Библіограф:
358
       \def\chaptername{{\cyr\CYRG\cyrl\cyra\cyrv\cyra}}%
359
       \def\appendixname{%
360
         {\cyr\CYRP\cyrr\cyri\cyrl\cyro\cyrzh\cyre\cyrn\cyrii\cyre}}%
361
       \@ifundefined{thechapter}%
362
363
         {\def\contentsname{%
           {\cyr\CYRS\cyro\cyrd\cyre\cyrr\cyrzh\cyra\cyrn\cyrii\cyre}}}%
         {\def\contentsname{%
365
           {\cyr\CYRO\cyrg\cyrl\cyra\cyrv\cyrl\cyre\cyrn\cyrii\cyre}}}%
366
       \let\tocname=\contentsname
367
      % Списокъ иллюстрацій
368
       \def\listfigurename{%
369
         {\cyr\CYRS\cyrp\cyri\cyrs\cyro\cyrk\cyrhrdsn\
370
371
          \cyri\cyrl\cyryu\cyrs\cyrr\cyrr\cyrc\cyrii\cyrishrt}}
372
      % Списокъ таблицъ
       \def\listtablename{%
373
         {\cyr\CYRS\cyrp\cyri\cyrs\cyro\cyrk\cyrhrdsn\
374
          \cyrt\cyra\cyrb\cyrl\cyri\cyrc\cyrhrdsn}}%
375
376
      % Предмьтный указатель, ь (\cyryat) in X2 encoding only
377
       \def\indexname{%
         {\cyr\CYRP\cyrr\cyre\cyrd\cyrm\cyryat\cyrt\cyrn\cyrery\cyrishrt\space
378
          \cyru\cyrk\cyra\cyrz\cyra\cyrt\cyre\cyrl\cyrsftsn}}%
379
       \def\authorname{%
380
         {\cyr\CYRI\cyrm\cyre\cyrn\cyrn\cyro\cyrishrt\
381
          \cyru\cyrk\cyra\cyrz\cyra\cyrt\cyre\cyrl\cyrsftsn}}%
382
       \def\figurename{{\cyr\CYRR\cyri\cyrs.}}%
383
384
       \def\tablename{{\cyr\CYRT\cyra\cyrb\cyrl\cyri\cyrc\cyra}}%
       \def\partname{{\cyr\CYRCH\cyra\cyrs\cyrt\cyrsftsn}}%
386
       \def\enclname{{\cyr\cyrv\cyrk\cyrl.}}%
387
       \def\ccname{{\cyr\cyri\cyrs\cyrh.}}%
388
       \def\headtoname{{\cyr\cyrv\cyrh.}}%
389
       \def\pagename{{\cyr\cyrs.}}%
       \def\seename{{\cyr\cyrs\cyrm.}}%
390
       \def\alsoname{{\cyr\cyrs\cyrm.\ \cyrt\cyra\cyrk\cyrzh\cyre}}%
391
       \def\proofname{{\cyr\CYRD\cyro\cyrk\cyra\cyrz\cyra\cyrt
392
393
         \cyre\cyr1\cyrsftsn\cyrs\cyrt\cyrv\cyro}}%
       \def\glossaryname{{\cyr\CYRS\cyrl\cyro\cyrv\cyra\cyrr\cyrsftsn\
394
         \cyrt\cyre\cyrr\cyrn\cyrn\cyro\cyrv}}% <-- Needs translation
395
396
       def\acronymname{\CYRA\cyrb\cyrr\cyre\cyrv\cyri\cyra\cyrt\cyru\cyrr\cyrery}\
397
       \def\lstlistingname{\CYRL\cyri\cyrs\cyrt\cyri\cyrn\cyrg}%
398
       \def\lstlistlistingname{\CYRL\cyri\cyrs\cyrt\cyri\cyrn\cyrg\cyri}%
399
       \def\nomname{\CYRO\cyrb\cyro\cyrz\cyrn\cyra\cyrch\cyre\cyrn\cyrii\cyrya}%
```

\def\notesname{\CYRZ\cyra\cyrm\cyre\cyrt\cyrk\cyri}%

400

```
ጉ%
401
   402
    %% RevTeX4 & RevTeX4-1
403
    \ifnum \@ifclassloaded{revtex4}{1}{\@ifclassloaded{revtex4-1}{1}{0}}>0
404
      \addto\captionsrussian@ancient{%
405
      \def\lofname{\listfigurename}
406
      \def\lotname{\listtablename}
407
      \def\figuresname{\CYRR\cyri\cyrs\cyru\cyrn\cyrk\cyri}%{Figures}%
408
      \def\tablesname{\CYRT\cyra\cyrb\cyrl\cyri\cyrc\cyrery}%{Tables}%
409
      \def\appendixesname{\CYRP\cyrr\cyri\cyro\cyrzh\cyre\cyrn\cyri\cyrya}%{Appendixes}%
410
      \def\acknowledgmentsname{\CYRB\cyr1\cyra\cyrg\cyro\cyra\cyrr\cyrr\cyro\cyrs\cyrt\cyr
411
      \def\andname{\cyri}%{and}
412
      \def\@pacs@name{PACS \cyrk\cyro\cyrd\cyrery: }%{PACS numbers: }%
413
      \def\@keys@name{\CYRK\cyrl\cyryu\cyrch\cyre\cyre\cyre\cyre \cyrs\cyrl\cyro\cyru\cyra: }
414
      \def\Dated@name{\CYRD\cyra\cyrt\cyra: }%{Dated: }%
415
      \def\Received@name{\CYRP\cyro\cyrl\cyru\cyrch\cyre\cyrn\cyro }%{Received }%
416
      \def\Revised@name{\CYRI\cyrs\cyrp\cyrr\cyra\cyrv\cyrl\cyre\cyrn\cyrn\cyra\cyrya \cyrv\cyr
417
      \def\Accepted@name{\CYRP\cyrr\cyrn\cyrn\cyrya\cyrt\cyro }%{Accepted }%
      419
420
     }%
    \fi
421
    422
423 \fi
```

#### 7.5.2 Date in Russian

\daterussian The macro \daterussian is used to reset the macro \today in Russian.

```
424 \if@uni@ode
     \addto\daterussian{%
      \def\today{\number\day~\ifcase\month\or
426
427
       января\or
428
       февраля\or
429
       марта\or
430
       апреля\or
       мая\or
431
432
       июня\or
433
       июля\or
434
       августа\or
       сентября\or
435
       октября\or
436
437
       ноября\or
       декабря\fi
438
       \space \number\year~r.}}
439
     \def\daterussian@ancient{%
440
      \def\today{\number\day~\ifcase\month\or%
441
442
       января\or
443
       февраля\or
444
       марта\or
445
       апреля\or
       мая\or
446
447
       iюня\or
       imπg\or
448
449
       августа\or
```

```
сентября\or
450
      октября\or
451
      ноября\or
452
      декабря\fi%
453
       \space \number\year~r.}}
454
455 \else
     \def\daterussian{%
456
      \def\today{\number\day~\ifcase\month\or
457
       \cyrya\cyrn\cyrv\cyra\cyrr\cyrya\or
458
       \cyrf\cyre\cyrv\cyrr\cyra\cyrl\cyrya\or
459
       \cyrm\cyra\cyrr\cyrt\cyra\or
460
       \cyra\cyrp\cyrr\cyre\cyrl\cyrya\or
461
       \cyrm\cyra\cyrya\or
462
       \cyri\cyryu\cyrn\cyrya\or
463
464
       \cyri\cyryu\cyrl\cyrya\or
       \cyra\cyrv\cyrg\cyru\cyrs\cyrt\cyra\or
465
       \cyrs\cyre\cyrn\cyrt\cyrya\cyrb\cyrr\cyrya\or
466
467
       \cyro\cyrk\cyrt\cyrya\cyrb\cyrr\cyrya\or
468
       \cyrn\cyro\cyrya\cyrb\cyrr\cyrya\or
469
       \cyrd\cyre\cyrk\cyra\cyrb\cyrr\cyrya\fi
       \space \number\year~\cyrg.}}
470
     \def\daterussian@ancient{%
471
      472
       \cyrya\cyrn\cyrv\cyra\cyrr\cyrya\or
473
474
       \cyrf\cyre\cyrv\cyrr\cyra\cyrl\cyrya\or
       \cyrm\cyra\cyrr\cyrt\cyra\or
475
       \cyra\cyrp\cyrr\cyre\cyrl\cyrya\or
476
       \cyrm\cyra\cyrya\or
477
478
       \cyrii\cyryu\cyrn\cyrya\or
479
       \cyrii\cyryu\cyrl\cyrya\or
       \cyra\cyrv\cyrg\cyru\cyrs\cyrt\cyra\or
480
       \cyrs\cyre\cyrn\cyrt\cyrya\cyrb\cyrr\cyrya\or
481
       \cyro\cyrk\cyrt\cyrya\cyrb\cyrr\cyrya\or
482
       \cyrn\cyro\cyrya\cyrb\cyrr\cyrya\or
483
484
       \cyrd\cyre\cyrk\cyra\cyrb\cyrr\cyrya\fi
485
       \space \number\year~\cyrg.}}
486 \fi
```

#### 7.5.3 Hyphenation patterns

Russian hyphenation patterns are automatically activated every time Russian language is selected via \selectlanguage, \foreignlanguage or equivalent command. But we need to declare values of \lefthyphenmin and \righthyphenmin; both are set to 2.

As of v.1.2 we removed a definition for  $\ensuremath{\verb|\ensuremath|}$  definition for  $\ensuremath{\ensuremath|}$  list not deal of russianb.ldf.

```
487 \providehyphenmins{\CurrentOption}{\tw0\tw0} 488 \providehyphenmins{russian}{\tw0\tw0}
```

#### 7.5.4 Extra definitions

\extrasrussian

\noextrasrussian

The macro \extrasrussian performs extra definitions in addition to resetting the caption names and date. The macro \noextrasrussian is used to cancel the actions of \extrasrussian.

First, we instruct babel to switch font encoding using earlier defined macros \cyrillictext and \latintext.

```
489 \addto\extrasrussian{\cyrillictext} 490 \addto\noextrasrussian{\latintext}
```

Second, we specify that the Russian group of shorthands should be used.

```
491 \addto\extrasrussian{\languageshorthands{russian}} 492 \addto\extrasrussian{\bbl@activate{''}}} 493 \addto\noextrasrussian{\bbl@deactivate{''}}
```

Now the action \extrasrussian has to execute is to make sure that the command \frenchspacing is in effect. If this is not the case the execution of \noextrasrussian will switch it off again.

```
494 \addto\extrasrussian{\bbl@frenchspacing}
495 \addto\noextrasrussian{\bbl@nonfrenchspacing}
```

#### 7.6 Alphabetic counters

Do we need to reset \@alph and \@Alph? They are used in the LaTeX core to define the macros \alph and \Alph, respectively, which type a counter with a corresponding letter of Latin alphabet. We just want to make sure that correct \latinencoding is used instead of \latinencoding to typeset the counter. Starting from v.1.2 we do not reset these macros since all Cyrillic encoding but X2 do have Latin letters. When using the X2 encoding user must himself take care about selecting correct encoding when he switches his keyboard. Our decision is motivated as follows. If selected Cyrillic font is visually different from Latin font, the macro \@alph and \@Alph will produce visually different output from surrounding text if they are used with Russian text, which is completely legitimate.

Notice for commented code:

We put \latinencoding in braces to avoid problems with \@alph inside minipages (e.g., footnotes inside minipages) where \@alph is expanded and we get for example '\fontencoding OT1' (\fontencoding is robust).

Note added on 2013/03/22: {\fontencoding{\latinencoding}\selectfont rises an error with recent version of microtype package after the \appendix declaration (which resets \thechapter to \@Alph\c@chapter}). Most languages do not reset \@alph and \@Alph macros and only ukrainian and bulgarian add \fontencoding to \@alph and \@Alph.

Since v.1.3 we do not reset \@alph and \@Alph here. Resetting \fontencoding in \@alph and \@Alph causes an error if the package smartref is loaded and a \sref occurs after the \appendix declaration which resets \thechapter to \@Alph\c@chapter.

```
496 %\def\@alph#1{{\fontencoding{\latinencoding}\selectfont 497 % \ifcase#1\or
498 % a\or b\or c\or d\or e\or f\or g\or h\or
499 % i\or j\or k\or l\or m\or o\or p\or
500 % q\or r\or s\or t\or u\or v\or w\or x\or
501 % y\or z\else\@ctrerr\fi}}%
502 %\def\@Alph#1{{\fontencoding{\latinencoding}\selectfont}
```

```
503% \ifcase#1\or
504% A\or B\or C\or D\or E\or F\or G\or H\or
505% I\or J\or K\or L\or M\or N\or O\or P\or
506% Q\or R\or S\or T\or U\or V\or W\or
507% Y\or Z\else\@ctrerr\fi}}%
```

We add new enumeration style for Russian manuscripts with Cyrillic letters.

\Asbuk We begin by defining \Asbuk which works like \Alph, but produces (uppercase) Cyrillic letters instead of Latin ones. The letters YO, ISHRT, HRDSN, ERY, and SFTSN are skipped, as usual for such enumeration.

```
508 \ensuremath{$\def\Asbuk\#1{\exp{\angle russian@Alph\csname}}$}
509 \if@uni@ode
510 \def\russian@Alph#1{\ifcase#1\or}
      A\or Б\or B\or Г\or Д\or E\or Ж\or
511
      3\or M\or K\or J\or M\or H\or O\or
512
      \Pi\or P\or C\or T\or Y\or \Phi\or X\or
513
      Ц\or Ч\or Ш\or ∃\or Ю\or Я\else\@ctrerr\fi}
514
515 \else
    516
       \label{lem:cyrb} $$ \CYRB\or\CYRV\or\CYRG\or\CYRD\or\CYRE\or\CYRZH\or $$
517
       \CYRZ\or\CYRI\or\CYRK\or\CYRL\or\CYRM\or\CYRN\or\CYRO\or
518
       \CYRP\or\CYRR\or\CYRS\or\CYRT\or\CYRU\or\CYRF\or\CYRH\or
519
520
       \CYRC\or\CYRCH\or\CYRSH\or\CYRSHCH\or\CYREREV\or\CYRYU\or
521
       \CYRYA\else\@ctrerr\fi}
522\fi
```

\asbuk The macro \asbuk is similar to \alph; it produces lowercase Russian letters.

```
523 \def\asbuk#1{\expandafter\russian@alph\csname c@#1\endcsname}
524 \if@uni@ode
525
    \def\russian@alph#1{\ifcase#1\or
526
      a\or 6\or B\or r\or g\or e\or m\or
527
      з\or и\or к\or л\or м\or н\or o\or
      \pi\or p\or c\or \tau\or y\or \phi\or x\or
528
      ц\or ч\or ш\or m\or э\or я\else\@ctrerr\fi}
529
530 \else
    531
      \cyra\or\cyrb\or\cyrv\or\cyrg\or\cyrd\or\cyre\or\cyrzh\or
532
      \cyrz\or\cyri\or\cyrk\or\cyrl\or\cyrm\or\cyrn\or\cyro\or
533
      \cyrp\or\cyrr\or\cyrs\or\cyrt\or\cyru\or\cyrf\or\cyrh\or
534
      \cyrc\or\cyrch\or\cyrsh\or\cyrshch\or\cyrrev\or\cyryu\or
535
       \cyrya\else\@ctrerr\fi}
536
537 \fi
```

Babel 3.9 has introduced a notion of a language attribute. An ancient attribute changes default behavior, which uses modern Russian spelling, an activates an alternative set of captions and date macros suitable for typesetting ancient Slavonic and Church books.

```
538 \bbl@declare@ttribute{russian}{ancient}{%
539 \PackageInfo{babel}{Russian attribute set to ancient}%
540 \let\captionsrussian=\captionsrussian@ancient
541 \let\daterussian=\daterussian@ancient
542 }
```

We don't want for long internal macros to waste memory. So we declare them to be usable within the preamble only.

```
543 \@onlypreamble\captionsrussian@ancient
544 \@onlypreamble\daterussian@ancient
```

#### 7.7 Cyrillic math

565 %}

574

For compatibility with older Russian packages we could define the \No macro. However the Russian number sign is now superseded with \textnumero. Moreover, it can be found on the keyboard. Therefore we discard \No since v.1.2.

As of version 1.2 the macros \cyrmath.. are not supported any more. They require package textmath which is not available now. Instead of \cyrmath.. it is advised to use corresponding \text.. commands; they do work in math mode.

```
547 %\RequirePackage{textmath}
548 % \@ifundefined{sym\cyrillicencoding letters}{}{%
549 % \SetSymbolFont{\cyrillicencoding letters}{bold}\cyrillicencoding
550 % \rmdefault\bfdefault\updefault
551 % \DeclareSymbolFontAlphabet\cyrmathrm{\cyrillicencoding letters}
And we need few commands to switch to different variants.
552 %\DeclareMathAlphabet\cyrmathbf\cyrillicencoding
553 % \rmdefault\bfdefault\updefault
554 %\DeclareMathAlphabet\cyrmathsf\cyrillicencoding
555 % \sfdefault\mddefault\updefault
556 %\DeclareMathAlphabet\cyrmathit\cyrillicencoding
```

```
556 %\DeclareMathAlphabet\cyrmathit\cyrillicencoding
557 % \rmdefault\mddefault\itdefault
558 %\DeclareMathAlphabet\cyrmathtt\cyrillicencoding
559 % \ttdefault\mddefault\updefault
560 %
561 %\SetMathAlphabet\cyrmathsf{bold}\cyrillicencoding
562 % \sfdefault\bfdefault\updefault
563 %\SetMathAlphabet\cyrmathit{bold}\cyrillicencoding
564 % \rmdefault\bfdefault\itdefault
```

```
We also define few math operator names according to Russian typesetting tradi-
          tions. Some math functions in Russian math books have names different from
          English writings. For example, sinh in Russian is called sh. Special consideration
    \tg
          needs the macro \th that conflicts with the text symbol \th defined in Latin 1
   \ctg
         encoding:
\arctg
\arcctg
         566 \AtBeginDocument{%
    \th
              \@ifpackageloaded{amsopn}
         567
   \cth
         568
              {%
\cosec
         569
                \DeclareMathOperator{\sh}{sh}%\MakeRobust\sh
                \DeclareMathOperator{\ch}{ch}%\MakeRobust\ch
         570
                \DeclareMathOperator{\tg}{tg}%\MakeRobust\tg
         571
                \DeclareMathOperator{\ctg}{ctg}\%\MakeRobust\ctg
         572
                \DeclareMathOperator{\arctg}{arctg}%\MakeRobust\arctg%
         573
```

\DeclareMathOperator{\arcctg}{arcctg}\\MakeRobust\arcctg\

```
\DeclareMathOperator{\cth}{cth}%\MakeRobust\cth%
            575
                    \DeclareMathOperator{\cosec}{cosec}\MakeRobust\cosec\%
            576
                    \DeclareMathOperator{\math@th}{th}%
            577
                 }{%
            578
                    \DeclareRobustCommand\sh{\mathop{\operator@font sh}\nolimits}%\MakeRobust\sh%
            579
                    \DeclareRobustCommand\ch{\mathop{\operator@font ch}\nolimits}%\MakeRobust\ch%
            580
                    \DeclareRobustCommand\tg{\mathop{\operator@font tg}\nolimits}%\MakeRobust\tg%
            581
                    \DeclareRobustCommand\ctg{\mathop{\operator@font ctg}\nolimits}%\MakeRobust\ctg%
            582
                    \DeclareRobustCommand{\arctg}{\mathop{\operator@font arctg}\nolimits}%
            583
                    \DeclareRobustCommand\arcctg{\mathop{\operator@font arcctg}\nolimits}%\MakeRobust\arcctg%
            584
                    \DeclareRobustCommand\cth{\mathop{\operator@font cth}\nolimits}%\MakeRobust\cth%
            585
                    \DeclareRobustCommand\cosec{\mathop{\operator@font cosec}\nolimits}%\MakeRobust\cosec%
            586
                    \DeclareRobustCommand{\math@th}{\mathop{\operator@font arctg}\nolimits}%
            587
            588
                 }%
            589 %
                  \addto\extrasrussian{%
                     \babel@save{\th}%
            590 %
                     \let\text@th\th
            591 %
            592 %
                     %\def\th{\TextOrMath{\text@th}{\math@th}}%
            593 %
                     \DeclareRobustCommand{\th}{\TextOrMath{\text@th}{\math@th}}
            594 %
                 }%
                 \left( \begin{array}{c} \left( \begin{array}{c} \\ \end{array} \right) \end{array} \right)
            595
                 \DeclareRobustCommand{\th}{\TextOrMath{\text@th}{\math@th}}
            596
            597 }
    \Prob
            Finally, we define some rare Russian mathematical symbols:
\Variance
            598 \def\Prob{\mathop{\kern\z@\mathsf{P}}\nolimits}
     \nod
            599 \def\Variance{\mathop{\kern\z@\mathsf{D}}\nolimits}
     \nok 600 \if@uni@ode
                 \def\nod{\mathop{\mathrm{н.о.д.}}\nolimits}
     \NOD 601
     \NOK 602
                 \def\nok{\mathop{\mathrm{\m.o.\k.}}\nolimits}
                 \def\NOD{\mathop{\mathrm{HOД}}\nolimits}
            603
    \Proj
                 \def\NOK{\mathop{\mathrm{HOK}}\nolimits}
            604
                 \def\Proj{\mathbb{\Pi}}\nolimits}
            605
            606 \else
            607
                 \def\nod{\mathop{\textnormal{\cyrn.\cyro.\cyrd.}}\nolimits}
                 \def\nok{\mathop{\textnormal{\cyrn.\cyro.\cyrk.}}\nolimits}
                 \def\NOD{\mathop{\textnormal{\CYRN\CYRO\CYRD}}\nolimits}
                 \def\NOK{\mathop{\textnormal{\CYRN\CYRO\CYRK}}\nolimits}
            611
                 \def\Proj{\mathop{\textnormal{\CYRP\cyrr}}\nolimits}
            612 \fi
```

#### 7.8 Final settings

The macro \ldf@finish does work needed at the end of each .ldf file. This includes resetting the category code of the @-sign, loading a local configuration file, and preparing the language to be activated at \begin{document} time.

613 \ldf@finish{russian}

## 8 Change History

1.1a	Change definition of \th 26
General: use \russianhyphenmins	Check for LuaTeX 8
to store the correct values 23	${ m EU1}$ and ${ m EU2}$ encodings added . 10
Use the new mechanism for	Removed \English and \Eng
dealing with active characters . 13	macros
1.1b	Removed LWN encoding 12
General: Added switch to LWN	Removed test for present of
encoding 23	encoding files 10
1.1c	Unicode code-points added for
General: Replaced \undefined with	LuaLaTeX 16, 21
\Qundefined and \empty with	1.2a
\@empty for consistency with	General: Indentation of 1st
₽TEX 8	paragraph removed 8
1.1d	1.2b
General: Moved the definition of	General: Renamed to russianu to
\atcatcode right to the	work with babel-beta 3.9 8
beginning	1.3
Now use \ldf@finish to wrap up 27	General: Removed \@alph and
Now use \LdfInit to perform initial checks 8	\@Alph 24
1.1e	Removed switch for doublequote
General: Added closing brace to	shorthands
second argument of \LdfInit 8	1.3b
1.1f	General: Renamed to russianb to
General: Add macro for thin space	work with babel 3.9 8
between initials 15	1.3c
Added definitions of Cyrillic	General: Fix bug in \daterussian . 8
emdash stuff and thinspace 8	1.3d
Added switch for doublequote	General: Fix bug in \Proj 8
shorthands	1.3e
1.1k	General: Update documentation 8
General: replaced all \penalty\@M	1.3f
with \nobreak 8	General: Update documentation for
1.11	generating by pdflatex.exe 8
General: Made not using inputenc a	1.3g
warning instead of an error 12	General: Added support for revtex4
1.1m	and revtex4-1 classes 8
General: Now use	1.3h
$\providehyphenmins to$	General: \cyrdash is redefined 8
provide a default value 23	Bugs fixed in captions for revtex4
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Table 1: Extra definitions made by russianb.ldf

\glqq \grqq \guillemotleft \guillemotright \dq	,,,, ,,, ,,,	German opening double quote (looks like "). German closing double quote (looks like "). French opening double quote (looks like «). French closing double quote (looks like »). Original quotes character (").
\babelhyphen{soft}	,,_	Optional (soft) hyphen sign, similar to \- but allows hyphenation in the rest of the word; equivalent to \babelhyphen{soft} in babel 3.9.
\babelhyphen{empty}	,,,,	Similar to "- but prints no hyphen sign (used for compound words with hyphen, e.g. x-""y); equivalent to \babelhyphen{empty} in babel 3.9.
\babelhyphen*{nobreak}	,,~	Compound word mark without a breakpoint, prints hyphen prohibiting hyphenation at the point; equivalent to <b>\babelhyphen*</b> {nobreak} in babel 3.9.
\babelhyphen{hard}	"=	A compound word mark with a breakpoint, prints hyphen allowing hyphenation in the composing words. equivalent to \babelhyphen{hard} in babel 3.9.
\babelhyphen{nobreak}	"	Disables ligature at this position; equivalent to \babelhyphen{nobreak} in babel 3.9.
\cyrdash		Raw Cyrillic emdash (does not care spaces around).
\cdash	,,	Cyrillic emdash in plain text.
\cdash~	,,~	Cyrillic emdash in compound names (as in Mendeleev"~Klapeiron).
\cdash*	''* '',	Cyrillic emdash for denoting direct speech. Thin space (allows further hyphenation as in D.", Mendeleev).