

```

1 (*LCY)
2 \NeedsTeXFormat{LaTeX2e}[1998/12/01]
3 \ProvidesFile{lcyenc.def}
4 [2022/06/11 v3.4e Cyrillic encoding definition file]

```

1 Definitions for the LCY encoding

The definitions for the ‘TeX text Cyrillic’ (LCY) encoding.

The LCY encoding is an extension of the OT1 encoding; all lower 128 positions are the same (and this part of the file was taken from ot1enc.def), but most of the upper 128 positions are used for Cyrillic glyphs.

Important note: The LCY font encoding is *incompatible* with the L^AT_EX 2_ε standard conventions regarding ucode and lcode settings! Therefore, the LCY font encoding should not be used in a multilingual environment (for example, Russian, German, and English), because the hyphenation will be broken! Instead, use the new standard Cyrillic encodings T2A, T2B, T2C and X2 defined in the cyrillic bundle for L^AT_EX 2_ε. One can only use LCY to typeset at most bilingual Russian-English documents.

Because of this incompatibility we have to set the lcode values, which are important for T_EX’s hyphenation process, to match the LCY encoding. We do not need to set the ucode and catcode values because they are unused in hyphenation process, and uppercase ↔ lowercase translation is defined via another mechanism in `\MakeUppercase` and `\MakeLowercase` commands. Again, this change of l-codes will break hyphenation for other languages with standard 8-bit font encodings! It is useless to make these changes in `\extrasrussian` (i.e., ‘locally’) for the same reason, so we make global changes, which are stored in the file `lcydefs.tex` defined below.

Note that *it is not sufficient to use the LCY encoding via the fontenc package, but one also should load a file lcydefs.tex which sets lcode and other T_EX registers for LCY encoding globally (breaking standard 8-bit font encodings)*. For this reason we created also a wrapper package ‘lcy’ which is a preferred mechanism for using the LCY font encoding, — it loads LCY encoding definition file and `lcydefs.tex`.

We rely on L^AT_EX to set the `\@uclclist`, and thus the `\NeedsTeXFormat` line above.

Declare the Local Cyrillic encoding. Specify a default for the font substitution process for the LCY encoding.

```

5 \DeclareFontEncoding{LCY}{}{}
6 \DeclareFontSubstitution{LCY}{cmr}{m}{n}

```

Declare the accents.

```

7 \DeclareTextAccent{"}{LCY}{127}
8 \DeclareTextAccent{'}{LCY}{19}
9 \DeclareTextAccent{.}{LCY}{95}
10 \DeclareTextAccent{=}{LCY}{22}
11 \DeclareTextAccent{^}{LCY}{94}
12 \DeclareTextAccent{`}{LCY}{18}
13 \DeclareTextAccent{~}{LCY}{126}
14 \DeclareTextAccent{H}{LCY}{125}
15 \DeclareTextAccent{u}{LCY}{21}
16 \DeclareTextAccent{v}{LCY}{20}
17 \DeclareTextAccent{r}{LCY}{23}

```

A fake accent for the Cyrillic breve.

```
18 \DeclareTextCommand{\U}{LCY}[1]{\TextSymbolUnavailable{\U{#1}}#1}
```

Some accents have to be built by hand:

```
19 \DeclareTextCommand{\b}{LCY}[1]
20   {\hmode\bgroup\o@lign{\relax#1\crrc\hidewidth\sh@ft{29}%
21   \vbox to.2ex{\hbox{\char22}\vss}\hidewidth}\egroup}
22 \DeclareTextCommand{\c}{LCY}[1]
23   {\leavevmode\setbox\z@\hbox{#1}\ifdim\ht\z@=1ex\accent24 #1%
24   \else{\oalign{\unhbox\z@\crrc\hidewidth\char24\hidewidth}}\fi}
25 \DeclareTextCommand{\d}{LCY}[1]
26   {\hmode\bgroup
27   \o@lign{\relax#1\crrc\hidewidth\sh@ft{10}.\hidewidth}\egroup}
```

Declare the text symbols.

```
28 \DeclareTextSymbol{\AE}{LCY}{29}
29 \DeclareTextSymbol{\OE}{LCY}{30}
30 \DeclareTextSymbol{\O}{LCY}{31}
31 \DeclareTextSymbol{\ae}{LCY}{26}
32 \DeclareTextSymbol{\i}{LCY}{16}
33 \DeclareTextSymbol{\j}{LCY}{17}
34 \DeclareTextSymbol{\oe}{LCY}{27}
35 \DeclareTextSymbol{\o}{LCY}{28}
36 \DeclareTextSymbol{\ss}{LCY}{25}
37 \DeclareTextSymbol{\textendash}{LCY}{124}
38 \DeclareTextSymbol{\textendash}{LCY}{123}
39 \DeclareTextSymbol{\textexclamdown}{LCY}{60}
40 %\DeclareTextSymbol{\textthyphenchar}{LCY}{'\-}
41 %\DeclareTextSymbol{\textthyphen}{LCY}{'\-}
42 \DeclareTextSymbol{\textquestiondown}{LCY}{62}
43 \DeclareTextSymbol{\textquotedblleft}{LCY}{92}
44 \DeclareTextSymbol{\textquotedblright}{LCY}{'\'}
45 \DeclareTextSymbol{\textquoteleft}{LCY}{'\'}
46 \DeclareTextSymbol{\textquoteright}{LCY}{'\}'
```

Some symbols which are faked from others:

```
47 \DeclareTextCommand{\L}{LCY}
48   {\leavevmode\setbox\z@\hbox{L}\hb@xt@\wd\z@{\hss\@xxxii L}}
49 \DeclareTextCommand{\l}{LCY}
50   {\hmode\bgroup\@xxxii l\egroup}
51 (*AAhack)
52 %\DeclareTextCommand{\AA}{LCY}
53 %   {\leavevmode\setbox\z@\hbox{!}\dimen@ht\z@\advance\dimen@-1ex%
54 %   \rlap{\raise.67\dimen@\hbox{\char23}}A}
55 %\DeclareTextCommand{\aa}{LCY}{\accent23a}
56 </AAhack>
```

`j*AAhacki`. In the LCY encoding ‘ \AA ’ has a hand-crafted definition:

```
57 \DeclareTextCompositeCommand{\r}{LCY}{A}
58   {\leavevmode\setbox\z@\hbox{!}\dimen@ht\z@\advance\dimen@-1ex%
59   \rlap{\raise.67\dimen@\hbox{\char23}}A}
```

`j/AAhacki`. In the LCY encoding, ‘ \textdollar ’ and ‘ $\text{\$}$ ’ share a slot.

```
60 \DeclareTextCommand{\textdollar}{LCY}{\hmode\bgroup
61   \ifdim \fontdimen\@ne\font >\z@
62     \slshape
```

```

63 \else
64 \upshape
65 \fi
66 \char‘\$\egroup}
67 \DeclareTextCommand{\textsterling}{LCY}{\hmode@bgroup
68 \ifdim \fontdimen\@ne\font >\z@
69 \itshape
70 \else
71 \fontshape{ui}\selectfont
72 \fi
73 \char‘\$\egroup}

```

And now, the Cyrillic part of the LCY encoding:

```

74 \DeclareTextSymbol{\CYRA}{LCY}{128}
75 \DeclareTextSymbol{\CYRB}{LCY}{129}
76 \DeclareTextSymbol{\CYRV}{LCY}{130}
77 \DeclareTextSymbol{\CYRG}{LCY}{131}
78 \DeclareTextSymbol{\CYRD}{LCY}{132}
79 \DeclareTextSymbol{\CYRE}{LCY}{133}
80 \DeclareTextSymbol{\CYRZH}{LCY}{134}
81 \DeclareTextSymbol{\CYRZ}{LCY}{135}
82 \DeclareTextSymbol{\CYRI}{LCY}{136}
83 \DeclareTextSymbol{\CYRISHRT}{LCY}{137}
84 \DeclareTextSymbol{\CYRK}{LCY}{138}
85 \DeclareTextSymbol{\CYRL}{LCY}{139}
86 \DeclareTextSymbol{\CYRM}{LCY}{140}
87 \DeclareTextSymbol{\CYRN}{LCY}{141}
88 \DeclareTextSymbol{\CYRO}{LCY}{142}
89 \DeclareTextSymbol{\CYRP}{LCY}{143}
90 \DeclareTextSymbol{\CYRR}{LCY}{144}
91 \DeclareTextSymbol{\CYRS}{LCY}{145}
92 \DeclareTextSymbol{\CYRT}{LCY}{146}
93 \DeclareTextSymbol{\CYRU}{LCY}{147}
94 \DeclareTextSymbol{\CYRF}{LCY}{148}
95 \DeclareTextSymbol{\CYRH}{LCY}{149}
96 \DeclareTextSymbol{\CYRC}{LCY}{150}
97 \DeclareTextSymbol{\CYRCH}{LCY}{151}
98 \DeclareTextSymbol{\CYRSH}{LCY}{152}
99 \DeclareTextSymbol{\CYRSHCH}{LCY}{153}
100 \DeclareTextSymbol{\CYRHRDSN}{LCY}{154}
101 \DeclareTextSymbol{\CYRERY}{LCY}{155}
102 \DeclareTextSymbol{\CYRSFTSN}{LCY}{156}
103 \DeclareTextSymbol{\CYREREV}{LCY}{157}
104 \DeclareTextSymbol{\CYRYU}{LCY}{158}
105 \DeclareTextSymbol{\CYRYA}{LCY}{159}

106 \DeclareTextSymbol{\cyra}{LCY}{160}
107 \DeclareTextSymbol{\cyrb}{LCY}{161}
108 \DeclareTextSymbol{\cyrv}{LCY}{162}
109 \DeclareTextSymbol{\cyrg}{LCY}{163}
110 \DeclareTextSymbol{\cyrd}{LCY}{164}
111 \DeclareTextSymbol{\cyre}{LCY}{165}
112 \DeclareTextSymbol{\cyrzh}{LCY}{166}
113 \DeclareTextSymbol{\cyrz}{LCY}{167}
114 \DeclareTextSymbol{\cyri}{LCY}{168}

```

```

115 \DeclareTextSymbol{\cyrishrt}{LCY}{169}
116 \DeclareTextSymbol{\cyrk}{LCY}{170}
117 \DeclareTextSymbol{\cyr1}{LCY}{171}
118 \DeclareTextSymbol{\cyrml}{LCY}{172}
119 \DeclareTextSymbol{\cyrn}{LCY}{173}
120 \DeclareTextSymbol{\cyro}{LCY}{174}
121 \DeclareTextSymbol{\cyrp}{LCY}{175}
122 \DeclareTextSymbol{\cyrre}{LCY}{224}
123 \DeclareTextSymbol{\cyrse}{LCY}{225}
124 \DeclareTextSymbol{\cyrte}{LCY}{226}
125 \DeclareTextSymbol{\cyrue}{LCY}{227}
126 \DeclareTextSymbol{\cyrfe}{LCY}{228}
127 \DeclareTextSymbol{\cyrhe}{LCY}{229}
128 \DeclareTextSymbol{\cyrce}{LCY}{230}
129 \DeclareTextSymbol{\cyrche}{LCY}{231}
130 \DeclareTextSymbol{\cyrsh}{LCY}{232}
131 \DeclareTextSymbol{\cyrshch}{LCY}{233}
132 \DeclareTextSymbol{\cyrhrdsn}{LCY}{234}
133 \DeclareTextSymbol{\cyrerey}{LCY}{235}
134 \DeclareTextSymbol{\cyrseftsn}{LCY}{236}
135 \DeclareTextSymbol{\cyrerev}{LCY}{237}
136 \DeclareTextSymbol{\cyrue}{LCY}{238}
137 \DeclareTextSymbol{\cyruea}{LCY}{239}

138 \DeclareTextSymbol{\CYRYO}{LCY}{240}
139 \DeclareTextSymbol{\cyryo}{LCY}{241}
140 \DeclareTextSymbol{\CYRGUP}{LCY}{242}
141 \DeclareTextSymbol{\cyrgup}{LCY}{243}
142 \DeclareTextSymbol{\CYRIE}{LCY}{244}
143 \DeclareTextSymbol{\cyrie}{LCY}{245}
144 \DeclareTextSymbol{\CYRII}{LCY}{246}
145 \DeclareTextSymbol{\cyrri}{LCY}{247}
146 \DeclareTextSymbol{\CYRYI}{LCY}{248}
147 \DeclareTextSymbol{\cyrri}{LCY}{249}
148 \DeclareTextSymbol{\CYRUSHRT}{LCY}{250}
149 \DeclareTextSymbol{\cyrushrt}{LCY}{251}

150 \DeclareTextSymbol{\cyrdash}{LCY}{196}
151 \DeclareTextSymbol{\textcurrency}{LCY}{197}
152 \DeclareTextSymbol{\textnumero}{LCY}{252}
153 \DeclareTextSymbol{\guillemotleft}{LCY}{253}
154 \DeclareTextSymbol{\guillemetleft}{LCY}{253}
155 \DeclareTextSymbol{\guillemotright}{LCY}{254}
156 \DeclareTextSymbol{\guillemetright}{LCY}{254}
157 \DeclareTextSymbol{\quotedblbase}{LCY}{255}

```

Text composites. The following declarations will not work for 8-bit chars generated via `inputenc` unless a `dblaccnt` package is used.

```

158 \DeclareTextComposite{"}{LCY}{\CYRE}{240}
159 \DeclareTextComposite{"}{LCY}{\cyre}{241}
160 \DeclareTextComposite{\U}{LCY}{\CYRI}{137}
161 \DeclareTextComposite{\U}{LCY}{\cyrri}{169}
162 \DeclareTextComposite{"}{LCY}{\CYRII}{248}
163 \DeclareTextComposite{"}{LCY}{\cyrri}{249}
164 \DeclareTextComposite{\U}{LCY}{\CYRU}{250}
165 \DeclareTextComposite{\U}{LCY}{\cyrue}{251}

```

166 </LCY>

2 Setup {cat,uc,lc,sf,math}code values for LCY font encoding

We store this setup in a separate file, `lcydefs.tex`, which is used also in a ‘cyrplain’ bundle for Plain \TeX .

167 (*LCYdefs)

168 \def\letter#1 #2 {%

Do not break inputenc:

169 \ifnum\catcode#1=13\else\catcode#1=11 \catcode#2=11 \fi

170 \uccode#1=#1 \uccode#2=#1

171 \lccode#1=#2 \lccode#2=#2

172 \sfcode#1=999 \sfcode#2=1000

173 \count255=#1 \advance\count255 "7000 \mathcode#1=\count255

174 \count255=#2 \advance\count255 "7000 \mathcode#2=\count255

175 }

176 \letter 128 160

177 \letter 129 161

178 \letter 130 162

179 \letter 131 163

180 \letter 132 164

181 \letter 133 165

182 \letter 134 166

183 \letter 135 167

184 \letter 136 168

185 \letter 137 169

186 \letter 138 170

187 \letter 139 171

188 \letter 140 172

189 \letter 141 173

190 \letter 142 174

191 \letter 143 175

192 \letter 144 224

193 \letter 145 225

194 \letter 146 226

195 \letter 147 227

196 \letter 148 228

197 \letter 149 229

198 \letter 150 230

199 \letter 151 231

200 \letter 152 232

201 \letter 153 233

202 \letter 154 234

203 \letter 155 235

204 \letter 156 236

205 \letter 157 237

206 \letter 158 238

207 \letter 159 239

208 \letter 240 241

209 \letter 242 243

```

210 \letter 244 245
211 \letter 246 247
212 \letter 248 249
213 \letter 250 251
214 \let\letter\undefined

```

To avoid bad hyphenation of words delimited with non-letter signs (like quotes), we have to zero uc/lccode parameters for these non-letter signs.

```

215 \lccode 196=0 \uccode 196=0 \lccode 197=0 \uccode 197=0
216 \lccode 252=0 \uccode 252=0 \lccode 253=0 \uccode 253=0
217 \lccode 254=0 \uccode 254=0 \lccode 255=0 \uccode 255=0
218 </LCYdefs>

```

3 A wrapper package for the LCY encoding

```

219 (*wrapper)
220 \ProvidesPackage{lcy}[1999/06/06 v1.0 Wrapper for LCY encoding]

You can use the ‘nowarn’ option to suppress boring warning.
221 \DeclareOption{nowarn}{\let\iflcy@warn\iffalse}
222 \let\iflcy@warn\iftrue
223 \ProcessOptions
224 \iflcy@warn
225 \typeout{%
226 *****^^J%
227 * The LCY encoding will break multilingual documents^^J%
228 * because it needs non-standard uc/lccode settings.^^J%
229 * Please use T2* encodings instead.^^J%
230 *****}
231 \fi
232 \RequirePackage[LCY]{fontenc}
233 \input{lcydefs}
234 </wrapper>

```