# ucs.sty - Unicode Support

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November 9, 2023

## Contents

**0 2022 Update Notes** **3**

**1 Usage** **4**

1.1 Special options . . . . . 4
1.2 Normal options . . . . . 5
1.3 Combining mode . . . . . 6
1.4 Defining unicode data . . . . . 7
1.5 Known problems . . . . . 7

**2 Thanks** **8**

**3 Implementation** **8**

3.1 File ucs.sty . . . . . 8
3.2 File ucsutils.sty . . . . . 30
3.3 File utf8x.def . . . . . 35
3.4 File ucsencs.def . . . . . 39

**4 Contributed files** **50**

4.1 File autofe.sty . . . . . 50
4.2 File cenccmn.tex . . . . . 51
4.3 File c00enc.def . . . . . 52
4.4 File c10enc.def . . . . . 53

*https://github.com/LaTeX-Package-Repositories/ucs

4.5 File c40enc.def . . . 53
4.6 File c42enc.def . . . 53
4.7 File c61enc.def . . . 56
4.8 File lklenc.def . . . 56
4.9 File lklkli.fd . . . 57
4.10 File ldvenc.def . . . 57
4.11 File ldvarial.fd . . . 60
4.12 File ldvc2000.fd . . . 60
4.13 File letenc.def . . . 60
4.14 File letgfzem.fd . . . 73
4.15 File letjiret.fd . . . 73
4.16 File letc2000.fd . . . 73
4.17 File ltaenc.def . . . 73
4.18 File ltaarial.fd . . . 76
4.19 File ltac2000.fd . . . 76
4.20 File ltgenc.def . . . 76
4.21 File ltgc2000.fd . . . 78
4.22 File ltlenc.def . . . 78
4.23 File ltlcmr.fd . . . 83
4.24 File ltwenc.def . . . 84
4.25 File ltwdsque.fd . . . 86
4.26 File ltwdsnol.fd . . . 86
4.27 File ltwdssin.fd . . . 87
4.28 File lucenc.def . . . 87
4.29 File lucarial.fd . . . 89
4.30 File lucc2000.fd . . . 89
4.31 File mkrenc.def . . . 89
4.32 File mkrezra.fd . . . 91
4.33 File mkrhadas.fd . . . 91
4.34 File mkromega.fd . . . 91
4.35 File mkrrashi.fd . . . 92
4.36 File t2denc.def . . . 92
4.37 File t2dcmr.fd . . . 95
4.38 File tengwarDS.enc . . . 95

4.39 File cp1252.enc . . . . . 99
4.40 File xsenc.def . . . . . 100
4.41 File xscmr.fd . . . . . 103
4.42 File ucshyper.sty . . . . . 103

# 0 2022 Update Notes

**When ucs/uf8x was first written, its Unicode support was far more extensive than the standard release, and users could simply opt in via the [utf8x] option. In the years since then Standard LaTeX Unicode support has been extended and enabled by default. Various features such as filenames, \label arguments and upper/lower case changing now work by default with UTF-8, but assuming the standard implementation.**

**With the June 2022 LaTeX release these incompatibilities meant that simply loading inputenc with the utf8x option could produce low level TeX errors.**

**The original maintainers kindly allowed the LaTeX project members to make the releases from 2022/08/07 v2.3. .**

**The remaining documentation is unchanged but version 2.3 introduces the following changes, and version 2.4 aborts with a warning if used with Unicode TeX.**

- **If a document uses \usepackage[utf8x]{inputenc} when the ucs package has *not* been loaded, a message is issued on the terminal, and the standard [utf8] option is used instead.**

  **The warning can be avoided by simply deleting**
  **\usepackage[utf8x]{inputenc}**
  **as UTF-8 is the default encoding.**

- **If the ucs package is loaded explicitly, then the utf8x.def file is input in the normal way. utf8x.def and ucs.sty have both been modified to be more compatible with current LaTeX releases. Notably making the active characters \protected so that they work with the new \MakeUppercase.**

# 1 Usage

Simply use `\usepackage{ucs}` and `\usepackage[utf8x]{inputenc}`, then you will be able to write your LaTeX-Documents in UTF-8.

You can access a Unicode character with `\unichar{`⟨*code*⟩`}`, even when the active input encoding is not `utf8`.

An unicode character can have an default glyph macro and several glyph macros associated with options. If one of these options is set, the associated macro is used, otherwise the default macro. If several associated options are set, an error is yielded. You may activate an option ⟨*name*⟩ by including it in the option
`\SetUnicodeOption` list while loading the ucs package, or by using `\SetUnicodeOption{`⟨*name*⟩`}`. To deactivate an option, prefix its name by `no`. Note that you must load `ucs.sty` before `\usepackage[utf8x]{inputenc}` if you want to supply options. Any option which you want to use must be used at least once in the preamble.

When you activate an option, you can supply a priority as optional argument. If there are several glyphs for a given code position, the one having the option with the highest priority is taken (an error is yielded in case of ambiguity). If you do not supply a priority, 100 is taken as default. "Normal" glyphs are associated with the option `default`, which is initially activated with a priority of 0.

NB: UTF-8 characters are interpreted by TEX as a sequence of commands, so don't use calls like `\macro ä` instead of `\macro{ä}` (this does not apply to ASCII characters).

This input encoding does not change the fontencoding automatically. For that purpose, you can use `autofe.sty`, which is included in the ucs package.

## 1.1 Special options

Several options have a special hardcoded meaning:

`combine` (*env.*)
- `combine`: Activates combining mode. See section 1.3.

`default` (*env.*)
- `default`: This option contains all characters, which are not explicitly associated with another option. But see also the option `document`. This option is activated per default, but has priority 0, i.e. any other activated option is prefered, unless its priority is explicitly given to be smaller.

`document` (*env.*)
- `document`: Every character you define in your document using `\Declare-UnicodeCharacter` has the option `document`. This option is activated per default having the priority 1000, therefore manually declared characters take precedence over all other characters, unless some other option has explicitly gotten a higher priority.

`fasterrors` (*env.*)
- `fasterrors`: When used, the name of an unicode character is not included in error messages any more, which runs much faster.

`graphics` (*env.*)
- `graphics`: When used, unknown characters are replaces by GIFs downloaded from `unicode.org`. Commands to download and convert these are executed

if -shell-escape is passed to LaTeX, otherwise they are proposed to the user in a warning message. A UNIX-machine supporting the commands `wget`, `giftopnm` and `pnmtops` is assumed.

`savemem` (*env.*)

- `savemem`: When used, only the character needed at the moment is loaded, not a whole page. This slows down operation, but saves space in the TeX-pool, especially with sparsly used character set like kanji. Use this, if you get an out of pool error or similar from TeX. If you change the state of this option during the run, you may get inexpected results.

`warnunknown` (*env.*)

- `warnunknown`: When used, an unknown unicode character does not generate an error, but a warning.

## 1.2 Normal options

The options described here are—strictly spoken—not part of `ucs.sty`, but are defined by the unicode data files. They are included here for convenience.

`autogenerated` (*env.*)

- `autogenerated`: This enables the characters, which are autogenerated as composition of other characters according to the informations in the UnicodeData.txt. These may or may not look good. You may have to define the `\unicodecircle`, `\unicodesquare`, `\unicodevertical`, `\unicodewide` and `\unicodesmall` macros to let all autogenerated macros work. Furthermore you may have to set some other options, when the autogenerated characters are build out of characters, which are not in the default set.

`cjkbg5` (*env.*)

- `cjkbg5`: See the explanation for `cjkjis` below and substitute C40 by C00, JIS by BIG-5 and `kanji48` by some appropriate font which has BIG-5 encoding (e.g. one of the "Arphic AR PL * Big5" fonts).

`cjkgb` (*env.*)

- `cjkgb`: See the explanation for `cjkjis` below and substitute C40 by C10, JIS by GB and `kanji48` by some appropriate font which has GB encoding (e.g. one of the "Arphic AR PL * GB" fonts).

`cjkhangul` (*env.*)

- `cjkhangul`: See the explanation for `cjkjis` below and substitute C40 by C61, JIS by "KSC5601 hangul syllables" and `kanji48` by some appropriate font which has KSC5601 encoding and hangul syllables (e.g. the `han` or the `han1` font from CJK-LaTeX).

`cjkjis` (*env.*)

- `cjkjis`: This enables the use of C40 (JIS) or C42 (JISdnp) encoded fonts. You need to have the `c40*.fd` files which are contributed with the package `CJK` and the `kanji48` font installed for this. Further you have to load the fontencoding `C40` (an option to the package `fontenc`).

  It is not necessary to load the package `CJK`. If you want to use it nevertheless take care of the following:

  - Load `CJK` before `fontenc`, or quite strange errors will occur.
  - Load `CJK` with option `encapsulated`, or it will overwrite some of the UTF8 input encoding.
  - Don't use the `CJK` environment, it destroys the input encoding. Use `ucjk` instead, which is a patched version and takes no arguments.

`fullmathletters` (*env.*)

- `fullmathletters`: This option has been removed. Replace all occurrences by `mathletters`.

`mathletters` (*env.*)

- `mathletters`: When using this option is set, some unicode code characters like greek or some hebrew letters generate the math mode glyphs. This option is disabled by default, because using math greek in a normal text does not look good. But you may set it in `\everymath` and `\everydisplay` and such enable the use of unicode characters in math mode. You can also use this to get a poor man's greek, it is however recommended to use the `cb` fonts instead.

`postscript` (*env.*)

- `postscript`: This option enables use of postscript, e.g. of postscript fonts. Some DVI-viewers may have problems with documents using this option, but most viewers can handle it correctly.

`privatecsur` (*env.*)

- `privatecsur`: This option enables use of characters in the private area according to the mapping by the ConScript Unicode Registry (`http://www.evertype.com/standards/csur/` and also `http://home.ccil.org/~cowan/csur/index.html`).

`tipa` (*env.*)

- `tipa`: This enables the use of the macros in the `tipa` package to display IPA symbols.

## 1.3 Combining mode

In some cases, Unicode documents contain sequences like U+0063 LATIN SMALL LETTER C U+0301 COMBINING ACUTE ACCENT(producing ć). In order to typeset them correctly, we cannot render U+0063 LATIN SMALL LETTER Cimmediately when it occurs, instead we have to wait whether some combining character is going to follow.

`combine` (*env.*) To enable this way of parsing in `ucs.sty`, we have to use the option `combine`. As long as this option is in effect, characters are not immediately rendered, but stored in a token register until they are output via

- resetting of the option (`\SetUnicodeOption{nocombine}`) or

`\unicodecombine`

- the command `\unicodecombine`.

Since characters handled by `ucs.sty` are not immediately output while ASCII characters are handled by TEXand directly rendered, you should not mix ASCII characters and non-ASCII characters while this option is in effect. Thus to obtain the above glyph, you cannot use

```
\SetUnicodeOption{combine}có\SetUnicodeOption{nocombine}
```

(where ó is U+0301 COMBINING ACUTE ACCENT), instead you can use one of the following constructions:

- ```
  \SetUnicodeOption{combine}\unichar{"63}ó%
  \SetUnicodeOption{nocombine}
  ```
  ```

- `\SetUnicodeOption{combine}\unicodevirtual{c}ó%`
  `\SetUnicodeOption{nocombine}` (`\unicodevirtual` takes arbitrary LaTeX code and inserts it, as thou it was a Unicode character; do not use Unicode characters inside `\unicodevirtual`).

\unicodevirtual

- `\SetUnicodeOption{combine}\myverbatim|có|%`
  `\SetUnicodeOption{nocombine}`
  where `\myverbatim`[1] is a command similar to `\verb`, but setting the catcodes of the ASCII characters to 13 (active) and then defining character no. $n$ to expand to `\unichar{`$n$`}`.

In cases where you only want to render occasional words containing combining characters and *no* ASCII, you can use a macro like

```
\newcommand\combword[1]{\SetUnicodeOption{combine}#1%
    \SetUnicodeOption{nocombine}}
```

and then simply typeset the concerning word as an argument to `\combword`.

## 1.4 Defining unicode data

A unicode character may be defined by

\DeclareUnicodeCharacter

`\DeclareUnicodeCharacter{`⟨*code*⟩`}{`⟨*macro*⟩`}`

or, when it is to be associated with a special option, by using

lareUnicodeCharacterAsOptional

`\DeclareUnicodeCharacterAsOptional{`⟨*code*⟩`}{`⟨*option*⟩`}{`⟨*macro*⟩`}`

where ⟨*code*⟩ is the unicode character number, ⟨*option*⟩ the associated option and ⟨*macro*⟩ the glyph's macro.

This definition is local.

In the automatically loaded data files `\uc@dclc` should be used instead.

An option ⟨*option*⟩ can be defined by

\DeclareUnicodeOption

`\DeclareUnicodeOption[`⟨*pkg*⟩`]{`⟨*option*⟩`}`.

If ⟨*pkg*⟩ is supplied, the option is set, if the package ⟨*pkg*⟩ is loaded.

You can add further packages, which automatically set an option, by

\LinkUnicodeOptionToPkg

`\LinkUnicodeOptionToPkg{`⟨*option*⟩`}{`⟨*pkg*⟩`}`.

If a character $c$ is unknown, it is looked up in in the `uni-`$n$`.def`-file, whereby $n = \lfloor \frac{c}{256} \rfloor$. So characters which are not document specific, should be defined in those file. For generating them, you should you the program `makeunidef.pl`.

You may find `\dirtyunicode` and `\UnicodeNeeds` interesting for writing glyphs macros, see in the implementation section.

## 1.5 Known problems

Note, that if a character from some not yet loaded Unicode page appears, a file has to be loaded. If this appears inside a word, kerning and ligatures do not work at that position.

[1] This command is not provided by `ucs.sty`, but some similar command may appear in future.

Further there are some commands, which expand their arguments in non-executing contexts, this makes it impossible for `ucs.sty` to load the character definition file at this place if this has not yet been done. In this case the concerning character is replaced by some message that you have to use `\PrerenderUnicode{...}`.

Both problems can be solved by preloading the offending characters. If you have for example U+03B1 GREEK SMALL LETTER ALPHA, which should be preloaded, simply use

`\PreloadUnicodePage`

- `\PreloadUnicodePage{3}` (the argument to `\PreloadUnicodePage` is $\lfloor \frac{n}{256} \rfloor$, where $n$ is the number of the character (here 0x3B1 = 945)) or

`\PrerenderUnicode`

- `\PrerenderUnicode{`$\alpha$`}` (the argument to `\PrerenderUnicode` can contain any LaTeX code, which is then rendered in an hbox, all still unknown characters a loaded and the result is thrown away; do not use e.g. `\footnote` or other commands which might not like to be executed several times).

# 2 Thanks

Thanks to...

- Michel Goossens who supplied many characters (e.g. Vietnamese, polytonic Greek),
- Manuel Kauers for testing my package before the first upload,
- Werner Lemberg, who wrote the `CJK` package, where I got the font definitions in `cenccmn.tex` from,
- Karsten Tinnefeld for many of the glyph macros in `cyrillic.ucf`,
- Pablo Rodriguez for reporting many bugs, especially concerning the interaction between `ucs.sty` and other packages.
- Stefan Röhrich for testing my package before the first upload,
- the authors of all those many LaTeX-packages for different scripts.

# 3 Implementation

## 3.1 File `ucs.sty`

1 ⟨*ucs.sty⟩

```
2 \ifx\ProvidesPackage\undefined\else
3 \ProvidesPackage{ucs}[2023/11/09 v2.4 UCS: Unicode input support]%
4 \fi
5 \ifx\Umathchar\undefined\else
6 \ifx\PackageWarningNoLine\undefined\else
7 \PackageWarningNoLine{ucs}{ucs package ignored with utf8 based engines}
8 \fi
```

```
\expandafter\endinput
\fi
% ^^A FIXME: What is the following code for? Is it for people who want to use ucs.sty with P
% ^^A        or ConTeXt?
\catcode`\@11

\ifx\AddToHook\@undefined\else
\AddToHook{package/hyperref/after}{%
 \def\HyPsd@expand@UTFviii{%
    \count@"C2
    \@tempcnta"E0
    \def\UTFviii@tmp{%
\expandafter\def\expandafter~\expandafter####\expandafter1\expandafter{~{####1}}%
}%
    \UTFviii@loop
    \count@"E0
    \@tempcnta"F0
    \def\UTFviii@tmp{%
\expandafter\def\expandafter~\expandafter####\expandafter1\expandafter####\expandafter2\expa
}%
    \UTFviii@loop
    \count@"F0
    \@tempcnta"F5
    \def\UTFviii@tmp{%
\expandafter\def\expandafter~\expandafter####\expandafter1\expandafter####\expandafter2\expa
}%
    \UTFviii@loop

  }
 \let\HyPsd@expand@utfvii\HyPsd@expand@UTFviii
}
\fi

\ifx\@gobble\undefined\def\@gobble#1{}\fi
\ifx\@gobbletwo\undefined\def\@gobbletwo#1#2{}\fi
\ifx\@gobblethree\undefined\def\@gobblethree#1#2#3{}\fi
\ifx\@gobblefour\undefined\def\@gobblefour#1#2#3#4{}\fi
\ifx\@firstofone\undefined\def\@firstofone#1{#1}\fi
\ifx\@tempcnta\undefined\csname newcount\endcsname\@tempcnta\fi
\ifx\@tempcntb\undefined\csname newcount\endcsname\@tempcntb\fi
\ifx\@testopt\undefined
  \def\@testopt#1#2{%
    \@ifnextchar[{#1}{#1[{#2}]}}\fi
\ifx\@protected@testopt\undefined\def\@protected@testopt{\expandafter\@testopt\@gobble}\fi
\let\@let@token\relax
% ^^A FIXME: The previous line was suggested on
% ^^A
% ^^A            <http://tex.stackexchange.com/questions/113261/conflict-between-ifxetex-and
% ^^A
% ^^A        where it says the following:
% ^^A
% ^^A            [The code for optionally defining \@ifnextchar] fails in the case where the
% ^^A            immediately preceding use of \@let@token was by \newif. That's because it i
% ^^A            \let to \iffalse, meaning that the conditional is unbalanced and everything
```

```
% ^^A            away'.
\ifx\@ifnextchar\undefined
  \def\@ifnextchar#1#2#3{%
    \let\reserved@d=#1%
    \def\reserved@a{#2}%
    \def\reserved@b{#3}%
    \futurelet\@let@token\@ifnch}\fi
\ifx\@ifnch\undefined
  \def\@ifnch{%
    \ifx\@let@token\@sptoken
      \let\reserved@c\@xifnch
    \else
      \ifx\@let@token\reserved@d
        \let\reserved@c\reserved@a
      \else
        \let\reserved@c\reserved@b
      \fi
    \fi
    \reserved@c}\fi
\ifx\@inputcheck\undefined\newread\@inputcheck\fi
\ifx\IfFileExists\undefined
\long\def\IfFileExists#1#2#3{%
  \openin\@inputcheck#1 %SPACE
  \ifeof\@inputcheck\def\reserved@a{#3}%
  \else\closein\@inputcheck\def\reserved@a{#2}%
  \fi
  \reserved@a}%
\fi
\ifx\InputIfFileExists\undefined
\long\def\InputIfFileExists#1#2{%
  \IfFileExists{#1}{#2\input #1 }}
\fi
\ifx\protect\undefined\let\protect\relax\fi
\ifx\@typeset@protect\undefined\let\@typeset@protect\relax\fi
\ifx\IeC\undefined\def\IeC{\ifx\protect\@typeset@protect
  \expandafter\@firstofone\else\noexpand\IeC\fi}\fi
```

`\XDeclareUnicodeOption` Synopsis: `{`⟨*pkg*⟩`}{`⟨*name*⟩`}{`⟨*activate*⟩`}{`⟨*on*⟩`}{`⟨*off*⟩`}`

`\DeclareUnicodeOption` Synopsis: `[`⟨*pkg*⟩`]{`⟨*name*⟩`}`

Declare an unicode option, i. e. the command `\ifUnicodeOption`⟨*name*⟩ to test if ⟨*name*⟩ is activated, further the commands `\@unicode@option@`⟨*name*⟩ and `\@unicode@option@no`⟨*name*⟩ to switch the option on and off, which take a priority as argument (it is ignored in case of the deactivation command). If the optional argument ⟨*pkg*⟩ is specified and not empty, the option is automatically activated, if package ⟨*pkg*⟩ is loaded.

If `{`⟨*activate*⟩`}` is code which is executed when the option is first used.

`{`⟨*on*⟩`}` and `{`⟨*off*⟩`}` are executed every time the option is switched on resp. off.

The activation and deactivation commands call `\uni@activate@option` at their first call, which then sets their normal behaviour. This is done to ensure, that on

the initial call we can mark this option as “in use”, so we can do optimizations when loading data.

```
\def\unicode@knownoptions{}
\def\XDeclareUnicodeOption#1#2#3#4#5{%
  \expandafter\let\csname ifUnicodeOption#2\endcsname\iffalse
  \expandafter\def\csname UnicodeOption#2true%
    \expandafter\endcsname\expandafter{%
      \expandafter\let\csname ifUnicodeOption#2\endcsname\iftrue}%
  \expandafter\def\csname UnicodeOption#2false%
    \expandafter\endcsname\expandafter{%
      \expandafter\let\csname ifUnicodeOption#2\endcsname\iffalse}%
  \expandafter\def\csname @unicode@option@#2\endcsname{%
    #3\uni@activate@option{#2}{}{#4}{#5}}%
  \expandafter\def\csname @unicode@option@no#2\endcsname{%
    #3\uni@activate@option{#2}{no}{#4}{#5}}%
  \ifx~#1~\else\LinkUnicodeOptionToPkg{#2}{#1}\fi
```

Keep a list of known options

```
  \let\uc@tempa\\\let\\\relax
  \edef\unicode@knownoptions{\\{#2}\unicode@knownoptions}%
  \let\\\uc@tempa
  }%
\let\uc@newcommand\def
\uc@newcommand\DeclareUnicodeOption{\@protected@testopt\DeclareUnicodeOption\DeclareUnicodeO
\uc@newcommand\DeclareUnicodeOption@[#1]#2{%
  \XDeclareUnicodeOption{#1}{#2}{}{}{}}%
```

`\uc@errormsg` [[[ TO BE DONE ]]]

```
\uc@newcommand\uc@errormsg#1#2{%
  \ifx\PackageError\undefined
    {\newlinechar`\^^J\def\MessageBreak{^^J}%
      \errhelp{#2}\errmessage{Package ucs: #1}}%
  \else
    \PackageError{ucs}{#1}{#2}%
  \fi
}%
\uc@newcommand\uc@warnmsg#1{%
  \ifx\PackageWarning\undefined
    {\newlinechar`\^^J\def\MessageBreak{^^J}%
      \message{Package ucs: #1\MessageBreak}}%
  \else
    \PackageWarning{ucs}{#1}%
  \fi
}%
```

`\uni@activate@option` Synopsis: {⟨*option*⟩}{⟨*no*⟩}{⟨*on*⟩}{⟨*off*⟩}{⟨*prio*⟩}
This sets the `\@unicode@option@`⟨*name*⟩ and `\@unicode@option@no`⟨*name*⟩ commands to their normal behavior (setting and unsetting the option), and then executes the first (in case ⟨*no*⟩ is empty) or the latter (in case ⟨*no*⟩ is `no`) with ⟨*prio*⟩ as argument.

`{`⟨*on*⟩`}` and `{`⟨*off*⟩`}` are executed when the option is swtiched on resp. off.

```
\def\uni@activate@option#1#2#3#4#5{%
  \ifx\uni@dataloaded\undefined
  \global\expandafter\def\csname @unicode@option@#1\endcsname##1{%
    \csname UnicodeOption#1true\endcsname
    \expandafter\def\csname uo-prio-#1\endcsname{##1}#3}%
  \global\expandafter\def\csname @unicode@option@no#1\endcsname##1%
    {\csname UnicodeOption#1false\endcsname#4}%
```

Mark this option as in use

```
  \csname @unicode@option@#2#1\endcsname{#5}\else
  \uc@errormsg{Option #1 must be activated or deactivated %SPACE
    at least once in the preamble before using it in the document}{%
    For optimization causes I must know all %SPACE
    options before loading any unicode data.\MessageBreak
    Try e.g. #1 or no#1 as package option to ucs.}\fi}
```

`\LinkUnicodeOptionToPkg` Synopsis: `{`⟨*option*⟩`}{`⟨*pkg*⟩`}`
Links the option ⟨*option*⟩ to package ⟨*pkg*⟩, i. e. if ⟨*pkg*⟩ is loaded, ⟨*option*⟩ is set. This mechanism is deprecated!

```
\def\LinkUnicodeOptionToPkg#1#2{%
  \AtBeginDocument{\@ifpackageloaded{#2}{\SetUnicodeOption{#1}}{}}}%
```

`\SetUnicodeOption` Synopsis: `[`⟨*prio*⟩`]{`⟨*option*⟩`}`
Activates the unicode option ⟨*option*⟩, or disables it, if prefixed by `no`. The option get the priority ⟨*prio*⟩ if activated, whereby the default ist 100.

```
\uc@newcommand\SetUnicodeOption{\@protected@testopt\SetUnicodeOption\SetUnicodeOption@{100}}
\uc@newcommand\SetUnicodeOption@[#1]#2{%
  \edef\uc@temp@a{@unicode@option@#2}%
  \expandafter\ifx\csname\uc@temp@a\endcsname\relax
    \PackageError{ucs}{Unknown unicode option #2}{}%
  \else
    \csname\uc@temp@a\endcsname{#1}%
  \fi}
```

Loads the global definitions of the unicode data. This is done so early, because we need the option definitions.

```
\ifx\@@input\undefined\input uni-global.def \else\input{uni-global.def}\fi
```

If this option is set, we don't include the characters name in error messages, which runs much faster.

```
\DeclareUnicodeOption{fasterrors}
```

If this option is set, errors about unknown characters become warnings.

```
\DeclareUnicodeOption{warnunknown}
```

If this option is set, we try to download and include GIFs from `unicode.org` to replace missing characters.

```
\DeclareUnicodeOption{graphics}
```

If this option is set, we try several memory saving optimizations, which slow down the operation.

```
\DeclareUnicodeOption{savemem}
```

This option is reserved for manual declarations in the document (using `\DeclareUnicodeCharacter` and `\DeclareUnicodeCharacterAsOptional`). It is activated by default.

```
\DeclareUnicodeOption{document}
\SetUnicodeOption[1000]{document}
```

This option contains all normal characters. It is activated by default, but with priority 0, i.e. all other options take precedence.

```
\DeclareUnicodeOption{default}
\SetUnicodeOption[0]{default}
```

This option switches character combination on and off (see section **??**). Switching it off also flushes the combination buffer.

```
\XDeclareUnicodeOption{}{combine}{}{%
  \let\uc@cmb\empty}{%
  \ifx\unicodecombine\undefined\else\unicodecombine\fi
  \def\uc@cmb{\uc@warn@nocombine}}%
\ifx\AtBeginDocument\undefined\else
  \AtEndDocument{\unicodecombine}\fi
\SetUnicodeOption{nocombine}%
```

`\uc@cmb` This is called by all combining characters to give a warning, if character combination is not enabled. Its default value is to give a warning, it is redefined to `\empty`, when character combination is enabled.

```
\def\uc@cmb{\uc@warn@nocombine}%
```

The usual option processing stuff.

```
\ifx\DeclareOption\undefined\else
\DeclareOption{showmagickern}{\def\uc@magic@glue{6805678}}%
\DeclareOption{hyperref}{\AtEndOfPackage{\RequirePackage{ucshyper}}}%
\DeclareOption*{\SetUnicodeOption{\CurrentOption}}\ProcessOptions*
\fi
```

Patch some fontencodings.

```
\ifx\AtBeginDocument\undefined
  \uc@warnmsg{Not loading ucsencs.def automatically.\MessageBreak
    Please load it after initializing fontencodings}%
\else
  \AtBeginDocument{\input{ucsencs.def}}\fi
```

If the option `graphics` is set, we need to load the package `graphicx`.

```
\AtBeginDocument{\ifUnicodeOptiongraphics\RequirePackage{graphicx}\fi}%
```

`\unicode@numtohex` Synopsis: {⟨*target*⟩}{⟨*number*⟩}{⟨*len*⟩}
Puts the hex representation of ⟨*number*⟩ into the macro ⟨*target*⟩ with at least ⟨*len*⟩ digits. ⟨*number*⟩ can be any valid TEX-number. The result contains uppercase letters. The assignment to ⟨*target*⟩ is global.

```
\uc@newcommand\unicode@numtohex{\protect\unicode@numtohex@}%
\uc@newcommand\unicode@numtohex@#1#2#3{%
  {%\let\empty\relax\relax
   %\ifx\empty\relax\def\empty{}%
     \count255=#2\relax\gdef#1{}%
     \count252=#3%
     \loop
     \count253=\count252\advance\count253by\count255\relax
     \ifnum\count253>0%
     \ifnum\count252>0\advance\count252by-1\relax\fi
     \count254=\count255%
     \divide\count255by16%
     \multiply\count255by16%
     \advance\count254by-\count255%
     \xdef#1{\ifcase\count254 0\or1\or2\or3\or4\or5\or6\or7\or
       8\or9\or A\or B\or C\or D\or E\or F\fi#1}%
     \divide\count255by16\relax
     \repeat
   %\else
   %  \def#1{dec:#2}%
   %\fi
   }}
```

`\uc@spc` Same meaning as `\space`, but `\space` is redefined in some contexts (e.g. in a bookmark in hyperref with option `pdftex`).

```
\let\uc@spc\space
```

`\uc@secondtry` If data is loaded to typeset a given character, its code position is saved herein, so when the character is called again, endless recursion in case of unfixable errors can be avoided using the information in `\uc@secondtry`

```
\newcount\uc@secondtry
```

`\unicode@invalid` Expands into LATEX-Code, which is to be inserted for an unknown unicode character. The character number is given as argument.

```
\uc@newcommand\unicode@invalid#1{%
  \unicode@combine%
```

If use of GIFs is activated, begin a group,...

```
  \ifUnicodeOptiongraphics{%
```

... calculate URL without `http://` and trailing `.gif`, save it to `\uc@temp@c`

```
\ifx\unicode@graphicsdir\undefined
  \def\unicode@graphicsdir{ucs-glyphs}\fi
\ifx\unicode@graphicscmd\undefined
  \def\unicode@graphicscmd{ucs-getglyph \hex\space \dec\space \path\space}\fi
\unicode@numtohex\hex{#1}4%
\count255=#1\relax
\divide\count255 by256\relax
\unicode@numtohex\uc@temp@b{\count255}2%
\edef\path{\unicode@graphicsdir/\uc@temp@b/U\hex.ps}%
\edef\dec{\number#1}%
```

Test if we already have that image (as PS)

```
\IfFileExists{\uc@temp@c}{}{%
```

otherwise run shell commands for download and conversion

```
  \typeout{Running: \unicode@graphicscmd}%
  \immediate\write18{\unicode@graphicscmd}%
  }%
```

Try if we have the file now

```
\IfFileExists{\path}{%
```

then include it

```
  \setbox255=\hbox{X}%
  \edef\uc@temp@b{\begingroup\noexpand\uni@resetcatcodes
    \noexpand\includegraphics[height=\the\ht255, trim=0 22.5 0 17.5]%
                    {\path}%
  \noexpand\ProvidesFile{U\hex.ps}%
      [Downloaded glyph for U+\hex]%
  \endgroup}%
\typeout{\meaning\uc@temp@b}%
\expandafter\unicodevirtual\expandafter{\uc@temp@b}%
}{%
```

otherwise we give a warning

```
  \PackageWarning{ucs}{File \uc@temp@d\uc@temp@c.ps %SPACE
    not found.\MessageBreak
    Use\MessageBreak
    \space\space\space\space\unicode@graphicscmd\MessageBreak
    or start latex with option -shell-escape\MessageBreak
    if you have not already done so.}%
```

and use the standard glyph for unknown characters

```
  \unicodevirtual{\unicode@invalidglyph{#1}}}\else
```

In case we don't want to use GIFs, simple include the standard glyph for invalid characters

```
  \unicodevirtual{\unicode@invalidglyph{#1}}\fi}
```

`\unicode@invalidglyph` This is macro creates the glyph to insert for an unknown character, if everything else fails (see `\unicode@invalid`). The character code for the substituted character is given in the first argument.

```
\uc@newcommand\unicode@invalidglyph#1{%
  {\unicode@numtohex\uc@temp@d{#1}4%
    \fontencoding{OT1}\texttt{[U+\uc@temp@d]}}}
```

`\uni@char` Synopsis: `{`⟨*code*⟩`}`
Expands into the LaTeX-macro for unicode character ⟨*code*⟩. Loads the corresponding `uni-....def`-file if necessary.

```
\uc@newcommand\uni@char#1{%
  \ucs@protected@unichar\iftrue
    \expandafter\ifx\csname u-\number#1-h/o\endcsname\relax

```

If the character is not defined yet, load it.

```
      \begingroup
        % In case \let is not executed, this (until ===) expands
        % to \let\relax\relax,
        % otherwise we have \let\uc@notloaderr\@gobble
        % Number of \empty's must equal number of args of \uc@char@notloaded
        \let\uc@notloaderr\@gobble\empty\@gobbletwo\relax\relax
        % ===
      \expandafter\endgroup
      % If \let not executed: Warning is emitted (see |\uc@notloaderr|)
      % otherwise: |\uc@char@notloaded| is called.
      \uc@notloaderr{\number#1}\uc@char@notloaded{#1}%
    \else

```

If the character is loaded, run `\uc@checkopts` with the options of this character as first arg and the code position as second; this will display the character with the correct option.

```
     \expandafter\expandafter\expandafter\uc@checkopts
       \expandafter\expandafter\expandafter
       {\csname u-\number#1-h/o\endcsname}{#1}%
    \fi
  \else
    \noexpand\unichar{#1}%
  \fi
}
\begingroup
  \lccode`\A=`\{\lccode`\B=`\}\lccode`\C=`\\%
  \lccode`\P=`\P\lccode`\U=`\U%
  \lowercase{%
\endgroup
  \uc@newcommand\uc@notloaderr#1#2#3{%
    \ifx\@gobble#1\else[Please insert %SPACE
      CPrerenderUnicodeACunicharA#1BB into preamble]\fi}}
```

\uc@checkopts Synopsis: {⟨*options*⟩}{⟨*code*⟩}
For the character ⟨*code*⟩ which has options ⟨*options*⟩ (each option enclosed in {}) the corresponding macro is searched an executed.

```
\uc@newcommand\uc@checkopts#1#2{%
```

Start the automaton. See **??** for an explanation.

```
  \expandafter\uc@checkopt@error\expandafter{\number#2}%
    {error}{error}{infinity}#1\@nil
}
```

\uo-prio-infinity Set the priority of the option `infinity` to something near to $-\infty$. This options does not exist, but is used internally in the automaton described in **??**.

```
\expandafter\uc@newcommand\csname uo-prio-infinity\endcsname{-2100000000}
```

\uc@checkopt@stick
\uc@checkopt@change
\uc@checkopt@error
\uc@checkopt@errorstick
Now the autogenerated code for the automaton described in **??** follows. It is generated by `mkcovariants.pl`.

```
%% === BEGIN AUTOGENERATED CODE
\uc@newcommand\uc@checkopt@stick#1#2#3#4#5{%
  \ifx\@nil#5%
\expandafter\ifx\csname u-#2-#1\endcsname\relax
  \uc@localdeferr{#1}{#2}%
\else
  \uc@output{\csname u-#2-#1\endcsname}{#1}%
\fi
    \expandafter\@gobblefour
  \else
    \iftrue\csname fi\endcsname
    \csname ifUnicodeOption#5\endcsname
      \ifnum\csname uo-prio-#2\endcsname>\csname uo-prio-#5\endcsname\uc@spc
        \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandafter
        \uc@checkopt@stick
      \else
        \ifnum\csname uo-prio-#2\endcsname<\csname uo-prio-#5\endcsname\uc@spc
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@change
        \else
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@error
        \fi
      \fi
    \else
      \expandafter\expandafter\expandafter\uc@checkopt@stick
    \fi
  \fi
  {#1}{#2}{#5}{#2}%
}
\uc@newcommand\uc@checkopt@change#1#2#3#4#5{%
  \ifx\@nil#5%
```

```
\expandafter\ifx\csname u-#3-#1\endcsname\relax
  \uc@localdeferr{#1}{#3}%
\else
  \uc@output{\csname u-#3-#1\endcsname}{#1}%
\fi
    \expandafter\@gobblefour
  \else
    \iftrue\csname fi\endcsname
    \csname ifUnicodeOption#5\endcsname
      \ifnum\csname uo-prio-#3\endcsname>\csname uo-prio-#5\endcsname\uc@spc
        \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandafter
        \uc@checkopt@stick
      \else
        \ifnum\csname uo-prio-#3\endcsname<\csname uo-prio-#5\endcsname\uc@spc
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@change
        \else
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@error
        \fi
      \fi
    \else
      \expandafter\expandafter\expandafter\uc@checkopt@stick
    \fi
  \fi
  {#1}{#3}{#5}{#3}%
}
\uc@newcommand\uc@checkopt@error#1#2#3#4#5{%
  \ifx\@nil#5%
\uc@errordrawopt{#1}{#2, #3}{#4}%
    \expandafter\@gobblefour
  \else
    \iftrue\csname fi\endcsname
    \csname ifUnicodeOption#5\endcsname
      \ifnum\csname uo-prio-#4\endcsname>\csname uo-prio-#5\endcsname\uc@spc
        \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandafter
        \uc@checkopt@errorstick
      \else
        \ifnum\csname uo-prio-#4\endcsname<\csname uo-prio-#5\endcsname\uc@spc
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@change
        \else
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@error
        \fi
      \fi
    \else
      \expandafter\expandafter\expandafter\uc@checkopt@errorstick
    \fi
  \fi
```

```
  {#1}{#2, #3}{#5}{#4}%
}
\uc@newcommand\uc@checkopt@errorstick#1#2#3#4#5{%
  \ifx\@nil#5%
\uc@errordrawopt{#1}{#2}{#4}%
    \expandafter\@gobblefour
  \else
    \iftrue\csname fi\endcsname
    \csname ifUnicodeOption#5\endcsname
      \ifnum\csname uo-prio-#4\endcsname>\csname uo-prio-#5\endcsname\uc@spc
        \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandafter
        \uc@checkopt@errorstick
      \else
        \ifnum\csname uo-prio-#4\endcsname<\csname uo-prio-#5\endcsname\uc@spc
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@change
        \else
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \expandafter\expandafter\expandafter\expandafter\expandafter\expandafter\expandaft
          \uc@checkopt@error
        \fi
      \fi
    \else
      \expandafter\expandafter\expandafter\uc@checkopt@errorstick
    \fi
  \fi
  {#1}{#2}{#5}{#4}%
}
% === END AUTOGENERATED CODE
```

`\uc@errordrawopt` Synopsis: `{`⟨*code*⟩`}{`⟨*bestopts*⟩`}{`⟨*prefopt*⟩`}`

This is called, if several options match the character ⟨*code*⟩ with same priority or when no option matches (then ⟨*prefopt*⟩ is `infinity`).

In case of several matching options, ⟨*bestopts*⟩ is a comma separated list (with spaces, intended for display) and ⟨*prefopt*⟩ s one of these.

After yielding an error or warning, the character is displayed with option ⟨*prefopt*⟩ (except when ⟨*prefopt*⟩ is `infinity`, then `\unicode@invalid` is rendered.

```
\let\unicode@empty\empty
\uc@newcommand\uc@errordrawopt#1#2#3{%
```

Check whether we are in executing context

```
  \let\unicode@empty\relax\relax
  \ifx\unicode@empty\relax\let\unicode@empty\empty
```

if yes, operate normally

```
    \unicode@numtohex\uc@temp@b{#1}4%
    \ifnum\csname uo-prio-#3\endcsname=-2100000000\relax
```

If ⟨*prefopt*⟩ is `infinity`, give an unknown character error and display the character

```
      \expandafter\ifx\csname
        missing-unicode-warned-\number#1\endcsname\relax
        \global\expandafter\let\csname
          missing-unicode-warned-\number#1\endcsname\@ne
        \unicode@error@unknown\@ne{Character \number#1\uc@spc
          \uc@spc= U+\uc@temp@b\uc@spc
          matches no activated options.\MessageBreak
          Type H to see available options}{#1}%
      \else
        \PackageWarning{ucs}{Character % SPACE
% \tobe: nothing rendered?
          \number#1 \uc@spc= 0x\uc@temp@b\uc@spc
          appeared again.}%
      \fi
    \else
```

Otherwise inform the user of the collision...

```
      \@getcharinfo\uc@temp@c{#1}%
      \PackageWarning{ucs}{Character %SPACE
        \number#1 \uc@spc= 0x\uc@temp@b\uc@spc
        matches options\MessageBreak
        \uc@spc\uc@spc\uc@spc#2\MessageBreak
        with same priority \csname uo-prio-#3\endcsname. %SPACE
        Selecting option #3.\MessageBreak
        \uc@temp@c}%
```

and render the glyph corresponding to option ⟨*prefopt*⟩.

```
      \uc@output{\csname u-#3-#1\endcsname}{#1}%
    \fi
```

if we are in non-executing context, replace ourself by a `\unichar` call, since otherwise constructs like `\section{abc \SetUnicodeOption{def} ghi}` may yield errors (because of writing to the toc file). Note that this is a hack, it is better to make `\unichar` protected when this happens.

```
  \else
    \noexpand\unichar{#1}%
  \fi
}
```

`\uc@output` Synopsis: `{`⟨*macro*⟩`}{`⟨*code*⟩`}`
Output an unicode character. Its glyph macro is ⟨*macro*⟩, its code (for error messages) ⟨*code*⟩.

If `\unicode@delay` equals 1 (via `\let`), the character is not output.

If character combination is enabled, outputting is done by `\uc@combine`.

If the glyph macro defines `\uc@throw`, `\uc@throw` is executed after defining `\uc@got` to ⟨*code*⟩. This allows the macros to yield error messages containing the character code.

```
\uc@newcommand\uc@output#1#2{%
  \ifx\unicode@delay1\let\unicode@delay\relax\else
    \ifUnicodeOptioncombine
```

If the character is combining, outputting is handled by `\uc@combine`.

```
      \expandafter\uc@combine\expandafter{#1}{#2}%
    \else
```

Output the character

```
      \uc@prechar@exec{#2}%
%      \ifx\unicode@charfilter\undefined
%        #1{}%
%      \else
         \unicode@charfilter{#1{}}%
%      \fi
    \fi
```

If an exception has been thrown by the glyph macro, execute it with `\uc@got` defined to ⟨*code*⟩.

```
    \ifx\uc@throw\undefined\else
      \def\uc@got{#2}\uc@throw\global\let\uc@throw\undefined\fi
  \fi
}%
\uc@newcommand\uc@prechar@exec#1{%
  \ifx\uc@prechar\undefined\else\uc@prechar{#1}\fi}
```

`\uc@localdeferr` [[[ TO BE DONE ]]]

```
\uc@newcommand\uc@localdeferr#1#2{%
  \@getcharinfo\uc@temp@a{#1}%
  \PackageError{ucs}{Internal error in character \number#1, %SPACE
    option #2}{I probably got confused by intermixed local %SPACE
    and global definitions.\MessageBreak Try to load the needed %SPACE
    code page via \noexpand\PreloadUnicodePage
    before declaring anything by yourself.}{\uc@temp@a}%
  \unicode@invalid{#1}%
}%
```

`\uc@warn@nocombine` Document me!!![[[ TO BE DONE ]]]

```
\uc@newcommand\uc@warn@nocombine{%
  \PackageError{ucs}{Please activate option 'combine'}{Composed %SPACE
    characters can only be rendered correctly, when the option %SPACE
    'combine' is activated}}
```

`\uc@combtoks` Document me!!![[[ TO BE DONE ]]]

`\uc@combtoksb`

`\uc@temptokena`

```
\newtoks\uc@combtoks
\newtoks\uc@combtoksb
\newtoks\uc@temptokena
```

`\unicode@combine` Document me!!![[[ TO BE DONE ]]]

```
\uc@newcommand\unicode@combine{%
  \uc@check@magicglue%
```

```
  \ifx\uc@combining@prechar\undefined\global\let\uc@comb@code\undefined\fi
  \ifx\uc@comb@code\undefined\uc@temptokena{}\else
    \uc@temptokena\expandafter{\expandafter\uc@prechar@exec
      \expandafter{\uc@comb@code}}\fi%
  \global\let\uc@comb@code\undefined
  \global\expandafter\expandafter\expandafter\expandafter\expandafter
  \expandafter\expandafter\uc@combtoksb
  \expandafter\expandafter\expandafter
  \expandafter\expandafter\expandafter\expandafter{%
    \expandafter\expandafter\expandafter\the
    \expandafter\expandafter\expandafter\uc@combtoksb
    \expandafter\the\expandafter\uc@temptokena\the\uc@combtoks}%
  \global\uc@combtoks{}}
%\def\uc@magic@glue{680567893}
\def\uc@magic@glue{5381}
\uc@newcommand\uc@check@magicglue{%
  \ifnum\lastskip=\uc@magic@glue\unskip\else
    \begingroup
      \edef\uc@temp@a{\the\uc@combtoks}%
      \ifx\uc@temp@a\empty\else
      \PackageWarning{ucs}{Magic kern expected. Probably some %SPACE
        non-unicode characters mixed in while option combine was %SPACE
        in effect.}\fi\endgroup
  \fi}
```

\unicodevirtual

```
\uc@newcommand\unicodevirtual#1{%
  \def\uc@temp@a##1{#1}\uc@output{\csname uc@temp@a\endcsname}{"FFFF}}
```

\unicode@combine Document me!!![[[ TO BE DONE ]]]

```
\uc@newcommand\unicodecombine{%
  \ifx\protect\@typeset@protect
    \unicode@combine%
    %\typeout{WRITING: \the\uc@combtoksb}%
    \the\uc@combtoksb
    \uc@prechar@exec{-1}%
    \global\uc@combtoksb{}%
```

If an exception has been thrown by the glyph macro, execute it with \uc@got defined to ⟨*code*⟩.

```
      \ifx\uc@throw\undefined\else
        \def\uc@got{-1}\uc@throw\global\let\uc@throw\undefined\fi
  \else
    \noexpand\unicodecombine\fi
}
```

\uc@combine Document me!!![[[ TO BE DONE ]]]

```
\uc@newcommand\uc@combine#1#2{%
  \ifx\protect\@typeset@protect
    \@temptokena\expandafter{#1{}}%
```

```
    \expandafter\expandafter\expandafter\ifx
    \expandafter\uc@firstofmany\the\@temptokena\uc@firstofmany\uc@cmb
      \uc@check@magicglue%
      \uc@combtoks\expandafter\expandafter\expandafter\expandafter
     \expandafter\expandafter\expandafter{%
        \expandafter\expandafter\expandafter\@gobble
        \expandafter#1\expandafter{\the\uc@combtoks}}%
    \else
      \unicode@combine%
      \xdef\uc@comb@code{\number#2}%
      \global\uc@combtoks\expandafter{#1{}}%
    \fi
    %\typeout{->COMBTOKS: \the\uc@combtoks}%
    \hskip\uc@magic@glue spplus0ptminus0pt %SPACE ; Insert magic glue
  \else
    \noexpand\unichar{\number#2}\fi
}
```

`\uc@char@notloaded` Part of `\uni@char` which is only executed when the character is not defined (yet).

Note that this command breaks kerning and ligatures.

```
\uc@newcommand\uc@char@notloaded#1{%
```

Calculate the name of the corresponding file

```
  \count255=#1\divide\count255 by 256%
  \edef\uc@temp@a{uni-\number\count255.def}%
```

If the file was not loaded yet (\⟨*filename*⟩ is not set) and we are not just called by uni@char after a first failure (`\uc@secondtry` is not set to actual character), jump to `\else`-Branch

```
  \expandafter\ifx\csname\uc@temp@a\endcsname\relax\else
    \uc@secondtry#1\relax\fi
  \ifnum\uc@secondtry=#1\relax
```

If the file has already been loaded, but the character is unknown, output an error and show the replacement glyph

```
    \unicode@numtohex\uc@temp@b{#1}4%
    \expandafter\ifx\csname
      missing-unicode-warned-\number#1\endcsname\relax
    \global\expandafter\let\csname
      missing-unicode-warned-\number#1\endcsname\@ne
      \unicode@error@unknown\@ne{Unknown Unicode character % SPACE
        \number#1 \uc@spc= U+\uc@temp@b,\MessageBreak
        possibly declared in \uc@temp@a.\MessageBreak
        Type H to see if it is available with options}{#1}%
    \else
      \PackageWarning{ucs}{Unknown character % SPACE
        \number#1 \uc@spc = 0x\uc@temp@b\uc@spc
        appeared again.}%
      \unicode@invalid{#1}%
    \fi
  \else
```

Begin a group for included file, so that only explicitly exported macros are defined globally

```
    \begingroup
```

Mark file as loaded (premature, but that's OK)

```
    \ifUnicodeOptionsavemem
%       \expandafter\let\csname\uc@temp@a\endcsname\@ne
    \else
      \global\expandafter\let\csname\uc@temp@a\endcsname\@ne
    \fi
```

Set `\uc@got` to the code position to be loaded (needed for option savemem)

```
    \def\uc@got{#1}%
```

Reset catcodes to a reasonable default.

```
    \uni@resetcatcodes
```

Load file.

```
    \expandafter\InputIfFileExists\expandafter{\uc@temp@a}{%
```

Indicate, that unicode data has been loaded (for `\uni@activate@option`).

```
      \global\let\uni@dataloaded1%
      }{%
      }%
```

End of local group for inputted file

```
    \endgroup
```

Retry displaying character. This won't cause infinite recursion, because we have marked this file as loaded (globally or, if `savemem` is set, at least here).

```
    \uc@secondtry#1\relax%
    \uni@char{#1}%
  \fi
  }
```

`\PreloadUnicodePage` Loads the `uni-....def`-file with the given number. Deprecated, not maintained any more. May be removed in the future.

```
\uc@newcommand\PreloadUnicodePage#1{%
  \begingroup
  \global\expandafter\let\csname uni-#1.def\endcsname\@ne
  \uni@resetcatcodes
  \InputIfFileExists{uni-#1.def}{\let\uni@dataloaded1}{%
    \PackageError{ucs}{Could not find uni-#1.def}{}}%
  \endgroup}
```

`\PrerenderUnicode` [[[ TO BE DONE ]]]

```
\uc@newcommand\PrerenderUnicode{%
  \@ifstar{\@prerenderunicode\unichar}{\@prerenderunicode\@gobble}}%
\uc@newcommand\@prerenderunicode#1#2{%
  \begingroup
  \UnicodeCharFilter\@gobble
  \let#1\@gobble\setbox0\hbox{#2}\endgroup}
```

`\DeclareUnicodeCharacter` `\DeclareUnicodeCharacter{`⟨*code*⟩`}{`⟨*macro*⟩`}` is an abbreviation for `\DeclareUnicodeCharacterAsOptional{`⟨*code*⟩`}{`document `}{`⟨*macro*⟩`}`.

```
\uc@newcommand\DeclareUnicodeCharacter#1#2{%
  \DeclareUnicodeCharacterAsOptional{#1}{document}{#2}}
```

`lareUnicodeCharacterAsOptional` Synopsis: `{`⟨*code*⟩`}{`⟨*option*⟩`}{`⟨*macro*⟩`}`

`\uc@dclc` Both macros set ⟨*macro*⟩ to be the glyph macro for the character ⟨*code*⟩ if option ⟨*option*⟩ is set.

The glyph macro is stored in `\u-`⟨*option*⟩`-`⟨*code*⟩ and ⟨*options*⟩ is added to the list `\u-`⟨*code*⟩`-h/o`, which is a concatenation of entries of the following syntax: `\\{`⟨*option*⟩`}`.

The following paragraph applies only to `\uc@dclc`: The character is declared globally. If `savemem` is set, the character is only declared, if it's code equals `\uc@got` and it's option is used (it does not matter, whether enabled or disabled). If `savemem` is not set and the option is not used, the macro is not defined but the option is saved in `\u-`⟨*code*⟩`-h/o` to support informative error messages. An existing character declaration is not overwritten. `\uc@dclc` must not be used outside the automatically loaded uni-*.def files.

Note that if a character is declared by `\DeclareUnicodeCharacterAsOptional` locally, and than its `uni-*.def`-file is loaded, it is not overwritten, so after leaving the group the character is undefined, even if it was in the `uni-*.def`-file. This constellation will not arise, if you declare document-local characters with option `document`.

```
\uc@newcommand\DeclareUnicodeCharacterAsOptional{%
  \let\uc@temp@a\relax\uni@declcharopt}
\uc@newcommand\uc@dclc#1#2{%
  \let\next=\uni@declcharopt
  \ifUnicodeOptionsavemem
    \ifnum\uc@got=#1\else
      \let\next=\@gobblethree\fi
  \fi
  \ifx\next\uni@declcharopt
    \expandafter\ifx\csname uni@active@#2\endcsname\relax
      \let\next\@gobblethree\else
    \expandafter\ifx\csname u-#2-\number#1\endcsname\relax\else
      \let\next\@gobblethree\fi\fi
    \let\uc@temp@a\global
  \fi
  \next{#1}{#2}}
```

`\uni@declcharopt` This macros does the real work for `\DeclareUnicodeCharacterAsOptional` and `\uc@dclc`. The options are the same as with those macros. `\uc@temp@a` must be `\relax` for a local definition and `\global` for a global definition.

```
\uc@newcommand\uni@declcharopt#1#2#3{%
  %\typeout{Defining: u-#2-\number#1 (\meaning\uc@temp@a)}%
  \ifx\utf@viii@map\undefined\else
    \expandafter\utf@viii@map\expandafter{\number#1}\fi
  \expandafter\uc@temp@a\expandafter\def
    \csname u-#2-\number#1\endcsname##1{#3}%\fi
  \expandafter\ifx\csname u-\number#1-h/o\endcsname\relax
    \expandafter\def\csname u-\number#1-h/o\endcsname{}\fi
  \expandafter\uc@temp@a\expandafter\edef
    \csname u-\number#1-h/o\endcsname{%
    {#2}\csname u-\number#1-h/o\endcsname}%
  }%
```

`\unichar` Outputs the unicode character number `#1`.

```
\let\unichar\uni@char
```

`\unicodesuper` `\unicodesub` `\unicodecircle` `\unicodesquare` `\unicodevertical` `\unicodewide` `\unicodesmall` Commands to apply to compositions which have the flag `<super>`, `<sub>`, `<circle>`, `<square>`, `<vertical>`, `<wide>` resp. `<small>` in the unicode database. These are needed for some autogenerated macros, but you have to define them by yourself. These macros are only used inside `\uc@output`, `\uc@throw` can be used.

```
\uc@newcommand\unicodesuper#1{\textsuperscript{#1}}%
%\uc@newcommand\unicodesub#1{%
%  \@latex@error{\protect\unicodesub\uc@spc not supported}\@eha}
%\uc@newcommand\unicodecircle#1{%
%  \@latex@error{\protect\unicodecircle\uc@spc not supported}\@eha}
%\uc@newcommand\unicodesquare#1{%
%  \@latex@error{\protect\unicodesquare\uc@spc not supported}\@eha}
%\uc@newcommand\unicodevertical#1{%
%  \@latex@error{\protect\unicodevertical\uc@spc not supported}\@eha}
%\uc@newcommand\unicodewide#1{%
%  \@latex@error{\protect\unicodewide\uc@spc not supported}\@eha}
%\uc@newcommand\unicodesmall#1{%
%  \@latex@error{\protect\unicodesmall\uc@spc not supported}\@eha}
```

`\@getcharinfo` Synopsis: `{⟨\target⟩}{⟨code⟩}`
Generates information for character ⟨*code*⟩ and stores it into ⟨`\target`⟩. `uninames.dat` is scanned for this purpose, unless disabled by the option `fasterrors`.

```
\uc@newcommand\@getcharinfo#1#2{%
  \begingroup
  \countdef\uc@got0\relax\uc@got#2\relax
  \global\def#1{Character's name unknown}%
  \def\info##1{\xdef#1{##1}}%
  \uni@resetcatcodes
  \ifUnicodeOptionfasterrors
  \global\def#1{No further informations known % SPACE
    because of option fasterrors.}\else
```

```
  {\InputIfFileExists{uninames.dat}{}{%
    \global\def#1{Character database uninames.dat not found. %SPACE
      \MessageBreak Character \number#2 \uc@spc unknown}}%
  \fi
%
  \toks255{}%
  \def\uc@dclc##1##2##3{\ifnum##1=\uc@got
    \toks255\expandafter{\the\toks255, ##2}\fi}%
  \count255\uc@got\divide\count255by256\relax
  %\edef\temp@a{uni-\number\count255.def}%
  \InputIfFileExists{uni-\number\count255.def}{}{}%
  \expandafter\ifx\expandafter\@nil\the\toks255 \@nil
    \xdef#1{#1\noexpand\MessageBreak
      Character is not defined in uni-*.def files}%
  \else
    \expandafter\expandafter\expandafter\@getcharinfo@
    \expandafter\expandafter\expandafter#1%
    \expandafter\expandafter\expandafter
    {\expandafter#1\expandafter}\the\toks255 \@nil%
  \fi
  \endgroup}
\def\@getcharinfo@#1#2, #3\@nil{\gdef#1{#2\MessageBreak
    Character available with following options:\MessageBreak
    \uc@spc\uc@spc\uc@spc #3}}
```

`\PrintUnicodeName` Synopsis: `{`⟨*number*⟩`}`
Prints information on character ⟨*number*⟩ via `\typeout`.

```
\uc@newcommand\PrintUnicodeName#1{{%
  \@getcharinfo{\ci}{#1}%
  \def\MessageBreak{^^J}%
  \typeout{^^J\ci^^J}}}
```

`\UnicodeCharFilter` Synopsis: `{`⟨`\`*command*⟩`}`
Sets ⟨`\`*command*⟩ to be called as a filter for each glyph macro. The glyph macro is given as the only argument.

```
\uc@newcommand\UnicodeCharFilter#1{\let\unicode@charfilter=#1}
```

`\UCSProtectionNone`
`\UCSProtectionIeC`
`\UCSProtectionUnichar`

```
\uc@newcommand\UCSProtectionNone{%
  \def\ucs@protected@unichar{}%
  \UnicodeCharFilter\@firstofone}
\uc@newcommand\UCSProtectionIeC{%
  \def\ucs@protected@unichar{}%
  \UnicodeCharFilter\IeC}
\uc@newcommand\UCSProtectionUnichar{%
  \def\ucs@protected@unichar##1{\ifx\protect\@typeset@protect}%
  \UnicodeCharFilter\@firstofone}
\UCSProtectionIeC
```

`\uni@resetcatcodes` Sets the catcode to reasonable defaults. Used before inputting `uni-....def`-files, because this can occur anywere. Note that `@` is of category “letter”.

```
\uc@newcommand\uni@resetcatcodes{%
  \endlinechar=13\relax
  \def\reserved@a##1##2{%
    \@tempcnta##1\relax
    \@tempcntb##2\relax
    \reserved@b
    }%
  \def\reserved@b{%
    \ifnum\@tempcnta>\@tempcntb\else
    \reserved@c\@tempcnta
    \advance\@tempcnta\@ne
    \expandafter\reserved@b
    \fi
    }%
  \catcode`\ =10\relax
  \catcode`\#=6\relax
  \catcode`\$=3\relax
  \catcode`\%=14\relax
  \catcode`\&=4\relax
  \catcode`\\=0\relax
  \catcode`\^=7\relax
  \catcode`\_=8\relax
  \catcode`\{=1\relax
  \catcode`\}=2\relax
  \catcode`\~=13\relax
  \catcode`\@=11\relax
  \catcode`\^^I=10\relax
  \catcode`\^^J=12\relax
  \catcode`\^^L=12\relax
  \catcode`\^^M=5\relax
  \def\reserved@c##1{\catcode##1=12\relax}%
  \reserved@c{`\!}%
  \reserved@c{`\"}%
  \reserved@a{`\'}{`\?}%
  \reserved@c{`\[}%
  \reserved@c{`\]}%
  \reserved@c{`\`}%
  \reserved@c{`\|}%
  \def\reserved@c##1{\catcode##1=11\relax}%
  \reserved@a{`\A}{`\Z}%
  \reserved@a{`\a}{`\z}%
  \def\reserved@c##1{\catcode##1=15\relax}%
  \reserved@a{0}{`\^^H}%
  \reserved@c{`\^^K}%
  \reserved@a{`\^^N}{31}%
  \catcode"7F=15\relax
  \relax}
```

`\unicode@error@unknown` Synopsis: `{`⟨*replacement*⟩`}{`⟨*msg*⟩`}{`⟨*code*⟩`}`

Outputs a warning or an error, depending of option `warnunknown`. When the user types "I!", he is asked for a definition for the missing glyph which is defined with option default. If ⟨*replacement*⟩ is ne, typeset the invalid glyph or the newly defined one. ⟨*replacement*⟩ must be z otherwise. character.

\@getcharinfo is used for the detail message.

```
\catcode`\!13\relax
\uc@newcommand\unicode@error@unknown{\protect\unicode@error@unknown@}%
\uc@newcommand\unicode@error@unknown@#1#2#3{%
```

When we are in an amstex environment like align, errors and warnings are disabled during measurement. Since an missing character error is only yielded once, this should not be so. So we trick amstex by setting \measuring@false locally.

```
  {\expandafter\countdef\expandafter\uc@got\expandafter0%
     \expandafter\relax\expandafter\uc@got\number#3\relax
  \ifx\measuring@false\undefined\else\measuring@false\fi
  \@getcharinfo\uc@temp@c{#3}%
  \ifUnicodeOptionwarnunknown
    \PackageWarning{ucs}{#2\MessageBreak\uc@temp@c.\MessageBreak
        Enter I\noexpand!<RET> to define the glyph.}%
    \ifx#1\@ne\unicode@invalid{#3}\fi
  \else
    \let!\unicode@read@definition\catcode`\!13\relax
    \let\uc@read@definition\undefined
    \PackageError{ucs}{#2}{\uc@temp@c.\MessageBreak
        Enter I\noexpand!<RET> to define the glyph.}%
    \ifx#1\@ne
    \ifx\uc@read@definition\undefined\unicode@invalid{#3}%
    \else\uc@read@definition\fi\fi
  \fi}}
\catcode`\!12\relax
\uc@newcommand\unicode@read@definition{%
  \uni@resetcatcodes
  \typein[\definition]{Please enter definition for %SPACE
    unicode character \number\uc@got}%
  \global\let\uc@read@definition\definition
  \toks255\expandafter{\definition}%
  \edef\definition{\noexpand\DeclareUnicodeCharacter%
    {\number\uc@got}{\the\toks255}}%
  \toks255\expandafter{\definition}%
  \typeout{Tip:\MessageBreak You may include\MessageBreak
    \uc@spc\uc@spc\the\toks255\MessageBreak
    into your document source.}%
  \the\toks255\relax
  }
```

\uc@firstofmany Use \uc@firstofmany⟨*args*⟩\uc@firstofmany to get the first token of ⟨*args*⟩.

```
\def\uc@firstofmany#1#2\uc@firstofmany{#1}
```

utf8.def has been renamed to utf8x.def, utf8.def is now the LaTeX kernel's UTF-8. To support old documents, we detect whether ucs.sty and utf8.def are in used, but utf8x is not loaded. In that case we emit a warning and try to patch \inputencoding to emulate the old behaviour. (If no \usepackage{ucs} appears, we are helpless, of course.)

```
\ifx\AtBeginDocument\undefined\else
```

```
\AtBeginDocument{\def\uc@tempa{\@inpenc@undefined@{utf8}}%
  \ifx\@inpenc@undefined\uc@tempa
  \ifx\restore@utf@viii@actives\undefined
  \PackageWarning{ucs}{**************************\MessageBreak You %SPACE
    seem to have loaded inputencoding utf8\MessageBreak (LaTeX kernel %SPACE
    UTF-8) instead of utf8x (ucs.sty UTF-8).\MessageBreak Probably you %SPACE
    are compiling a document written for a\MessageBreak
    pre-august-2004 ucs.sty.\MessageBreak
    **************************\MessageBreak Please use %SPACE
    \string\usepackage[utf8x]{inputenc} instead of\MessageBreak
    \string\usepackage[utf8]{inputenc}.\MessageBreak
    **************************\MessageBreak If you should really want %SPACE
    to use ucs.sty and kernel's\MessageBreak utf8.def together, use %SPACE
    \string\usepackage[utf8x,utf8]{inputenc}\MessageBreak to disable %SPACE
    compatibility mode\MessageBreak
    **************************\MessageBreak Activating compatibility %SPACE
    mode.\MessageBreak **************************\MessageBreak}%
  \global\let\uc@inputencoding\inputencoding
  \inputencoding{utf8x}%
  \def\inputencoding#1{%
    {\def\uc@tempa{#1}\def\uc@tempb{utf8}\ifx\uc@tempa\uc@tempb
      \aftergroup\@firstoftwo\else\aftergroup\@secondoftwo\fi}%
    {\restore@utf@viii@actives}{\uc@inputencoding{#1}}}%
  \fi\fi
}\fi

%
%
⟨/ucs.sty⟩
```

## 3.2 File `ucsutils.sty`

```
⟨*ucsutils.sty⟩
```

If running under LaTeX, parse options. Each option is assumed to be the name of macro to be imported. All macro names are saved into `\@ucsutils`, each prefixed by `\\`.

When running Plain-TeX, define `\@ucsutils` directly and then load `ucsutils.sty` using `\input`.

```
\ifx\DeclareOption\undefined\else
\ProvidesPackage{ucsutils}[2002/04/23 UCS: Auxiliary macros]%
\RequirePackage{ucs}%
\ifx\@ucsutils\undefined\let\@ucsutils\empty\fi
\DeclareOption*{%
  \edef\uc@temp@a{\csname\CurrentOption\endcsname}%
  \expandafter\g@addto@macro\expandafter\@ucsutils\expandafter
  {\expandafter\\\uc@temp@a}}%
\ProcessOptions*%
\fi
```

Define each macro, which is to be loaded, to `1`. This is later using to be able to check fast, whether a macro should be defined.

```
{\def\\#1{\ifx#1\relax\global\let#11\fi}\@ucsutils}%
```

`\@ucsutils@section` Checks whether the gives macro is to be defined. If yes, `^^B` is ignored, otherwise `^^B` is a comment. So after a call to `\@ucsutils@section` every line should be prefixes with `^^B`.

This macro is only used during the loading of `ucsutils.sty`.

```
\def\@ucsutils@section#1{\ifx#11\catcode2=9\else\catcode2=14\fi\relax}%
```

Execute the following stuff (prefixed with `^^B`) only if `\UnicodeEmbedFont` is to be loaded.

```
\@ucsutils@section\UnicodeEmbedFont
```

We need `keyval.sty` for `\setkeys` in `\UnicodeEmbedFont`.

```
^^B\RequirePackage{keyval}%
```

`\UnicodeEmbedFont` Synopsis: {⟨*options*⟩}
Declares an Unicode character range to be mapped directly to a font.

⟨*options*⟩ is a comma separated list of key/value-pairs. The following keys are supported.

- `encoding`: This is currently ignored. You may set it to the encoding of the font. If your font has a fontencoding, then you should provide it, since this key may be implemented in future.
- `start`: Start of the mapped range (Unicode position). This key is mandatory.
- `fontstart`: Start of the mapped range (in the font). Default: `0`.
- `num`: Length of the range. Default: Upto the end of the font.
- `option`: Unicode-Option of the defined Unicode characters. Default: `document`.

Note that presently you have to switch to the desired font manually before using the Unicode characters. No checking whether the correct font is activated is done.

```
^^B\def\UnicodeEmbedFont#1{%
```

Define keys for `\setkeys` if not yet done.

```
^^B  \ifx\KV@ucembedfont@start\undefined
^^B    \define@key{ucembedfont}{encoding}{\def\uc@embedfont@enc{##1}}%
^^B    \define@key{ucembedfont}{start}{\def\uc@embedfont@start{##1}}%
^^B    \define@key{ucembedfont}{fontstart}%
^^B                {\def\uc@embedfont@fontstart{##1}}%
^^B    \define@key{ucembedfont}{num}{\def\uc@embedfont@fontstart{##1}}%
^^B    \define@key{ucembedfont}{option}{\def\uc@embedfont@option{##1}}%
^^B  \fi
```

Define defaults.

```
^^B  \let\uc@embedfont@enc\undefined % Ignored
^^B  \let\uc@embedfont@start\undefined
^^B  \def\uc@embedfont@fontstart{0}%
^^B  \let\uc@embedfont@num\undefined
^^B  \def\uc@embedfont@option{document}%
```

Parse arguments.

```
^^B  \setkeys{ucembedfont}{#1}%
```

Error, when no start of range is given.

```
^^B  \ifx\uc@embedfont@start\undefined
^^B    \uc@errormsg{\string\UnicodeEmbedFont\space
^^B                 needs argument start=...}{}\fi
```

Rewrite numbers in `\uc@embedfont@fontstart` and `\uc@embedfont@start`, so that we know them to be simple decimal (and hopefully positive) numbers.

```
^^B  \edef\uc@embedfont@fontstart{\number\uc@embedfont@fontstart}%
^^B  \edef\uc@embedfont@start{\number\uc@embedfont@start}%
```

If no num-argument was given, calculate it so that the range goes until the end of the font.

```
^^B  \ifx\uc@embedfont@num\undefined
^^B    \@tempcnta-\uc@embedfont@fontstart
^^B    \advance\@tempcnta by256
^^B    \edef\uc@embedfont@num{\number\@tempcnta}%
^^B  \fi
```

Start real work.

For `\@tempcnta` = 0 to `\uc@embedfont@num`... For `\@tempcntb` = 0 to `\uc@embedfont@start+\uc@embe`

```
^^B  \@tempcnta0
^^B  \@tempcntb\uc@embedfont@fontstart
^^B  \loop\ifnum\@tempcnta<\uc@embedfont@num
```

Temporarily increase `\@tempcnta` by `\uc@embedfont@fontstart`, now it points to the actual position in the font.

```
^^B    \advance\@tempcnta by\uc@embedfont@start
```

We put the `\char`...-call into `\uc@temp@a`.

```
^^B    \edef\uc@temp@a{%
^^B      \noexpand\char\number\@tempcntb\space}%
```

And we define the Unicode character number `\@tempcntb` (option `\uc@embedfont@option`) to call character `\uc@temp@a`.

```
^^B    \expandafter\DeclareUnicodeCharacterAsOptional
^^B      \expandafter{\expandafter\@tempcnta\expandafter}%
^^B      \expandafter{\expandafter\uc@embedfont@option\expandafter}%
^^B      \expandafter{\uc@temp@a}%
```

Restore tempcnta.

```
^^B    \advance\@tempcnta by-\uc@embedfont@start
```

Increase loop variables.

```
^^B    \advance\@tempcntb by1
^^B    \advance\@tempcnta by1
^^B  \repeat
^^B}
```

Execute the following stuff (prefixed with `^^B`) only if `\univerb` is to be loaded.

```
\@ucsutils@section\univerb
```

`\uc@vbsetchar`

```
^^B\def\uc@vbsetchar#1#2{%
^^B  \catcode#1\active
^^B  \begingroup\uccode`\~#1\uppercase{\endgroup\protected\edef~}{#2}}
```

`\univerb` This macro behaves similar to the `\verb` macro. Note the following:

- No font change is effectuated.
- All characters < 128 (exceptions below) are handled by `\unichar`.
- All characters >= 128 are handled by the active inputencoding (try e.g. `utf8`).
- Combining mode is activated during the `\univerb` execution.
- Space (ASCII 32) does an implicit `\unicodecombine`.
- CR (ASCII 13) gives a line break (and an implicit `\unicodecombine`), but does not call `\unichar{13}`.
- Do not use `[` as the beginning of the verbatim sequence, this is reserved for future enhancements.

```
^^B\DeclareRobustCommand\univerb[1][]{\ifx\@nil#1\@nil\else\PackageError{ucs}{%
^^B    \string\univerb\space has optional argument}{%
^^B    \string\univerb[...] is not supported}\fi%
^^B  \bgroup
^^B  \@tempcnta\@ne
^^B  \loop\ifnum\@tempcnta<128\relax
^^B    \uc@vbsetchar\@tempcnta{\noexpand\unichar{\number\@tempcnta}}%
^^B    \advance\@tempcnta by\@ne
^^B  \repeat
^^B  \uc@vbsetchar{32}{\noexpand\unicodecombine\noexpand\unichar{32}}%
^^B  \uc@vbsetchar{13}{\noexpand\unicodecombine\noexpand\leavevmode\noexpand\\%
^^B    \noexpand\leavevmode}%
```

\verb@egroup

```
^^B  \def\verb@egroup{%
^^B    \SetUnicodeOption{nocombine}%
^^B    \global\let\verb@balance@group\@empty\egroup}%
^^B  \SetUnicodeOption{combine}%
^^B  \@sverb}
```

[[[ TO BE DONE ]]]

```
\@ucsutils@section\unistring
^^B\def\uc@spacechar{\futurelet\uc@spacechar\empty}\expandafter\uc@spacechar\uc@spc
^^B\def\@unistring#1{%
^^B  \ifx\uc@temp@a\uc@spacechar
^^B    \@temptokena\expandafter{\the\@temptokena\unicodecombine\unichar{32}}%
^^B  \fi
^^B  \ifx\tw@#1\else
^^B    \ifx\@ne#1\else
^^B      \ifnum`#1<128
^^B        \@temptokena\expandafter{\the\@temptokena\unichar{`#1}}%
^^B      \else
^^B        \@temptokena\expandafter{\the\@temptokena#1}%
^^B      \fi
^^B    \fi%
^^B    \expandafter\futurelet\expandafter\uc@temp@a\expandafter\@unistring
^^B  \fi
^^B}
^^B\DeclareRobustCommand\unistring[1]{%
^^B  \let\uc@temp@a\undefined
^^B  \@temptokena{}%
^^B  \@unistring\@ne#1\tw@
^^B  {\SetUnicodeOption{combine}%
^^B  \the\@temptokena
^^B  \SetUnicodeOption{nocombine}}}
```

Find out with macros where requested but not defined. Give an error for each. Undefine them (they were defined to `1` above).

```
{\def\\#1{%
    \ifx#11%
    \uc@errormsg{Can't load \string#1}{You have given the option
      \expandafter\@gobble\string#1 to ucsutils,\MessageBreak but
        there is no command called \string#1 in ucsutils.sty.}%
      \global\let#1\undefined
    \fi}
  \@ucsutils}%
```

Clean up.

```
\let\@ucsutils\undefined
\let\@ucsutils@section\undefined
\catcode2=15
%
%
%
```

⟨/ucsutils.sty⟩

### 3.3 File utf8x.def

```
⟨*utf8x.def⟩
\ifx\ProvidesFile\undefined\else
\ProvidesFile{utf8x.def}[2023/11/09 UCS: Input encoding UTF-8]%

\ifx\uc@char@notloaded\@undefined

\PackageNoteNoLine{ucs}{%
utf8x\space disabled,\space assuming\space standard\space utf8\space processing\MessageBreak
load\space ucs\space package\space to\space force\space utf8x\space processing}

\let\ucs@parse@XML@charref\parse@XML@charref
\let\ucs@parse@UTFviii@a\parse@UTFviii@a
\let\ucs@parse@UTFviii@b\parse@UTFviii@b
\AddToHook{begindocument/end}{%
\let\parse@XML@charref\ucs@parse@XML@charref
\let\parse@UTFviii@a\ucs@parse@UTFviii@a
\let\parse@UTFviii@b\ucs@parse@UTFviii@b
}

\protected\def\unichar#1{%
\begingroup
\count@#1\relax
\ifnum\count@>127
\parse@XML@charref
\else
\edef\UTFviii@tmp{\char\the\count@\relax}%
\fi
\expandafter
\endgroup
\UTFviii@tmp
}
%
\def\inputencodingname{utf8}
% need to re-input this to undo the RawInputEncoding
\input{utf8.def}%
%
\expandafter\expandafter\expandafter\endinput
\fi
\fi
```

Only load this file once. If it has already been loaded, just execute `\restore@utf@viii@actives`.

```
\expandafter\ifx\csname restore@utf@viii@actives\endcsname\relax\else
  \csname restore@utf@viii@actives\endcsname\expandafter\endinput\fi
\count255=\catcode`\@\catcode`\@11 %SPACE
\ifx\@gobble\undefined\def\@gobble#1{}\fi
\ifx\@gobbletwo\undefined\def\@gobbletwo#1#2{}\fi
```

Checks if `\unichar` is defined. Otherwise yields an error. This check is delayed until `\begin{document}` if necessary.

```
\ifx\AtBeginDocument\undefined\else
  \ifx\@nodocument\relax\else\expandafter\AtBeginDocument\fi
  {\ifx\unichar\undefined{\PackageError{utf8x}{%
```

```
        Please use \protect\usepackage{ucs} to support encoding utf8x}{}}\fi}%
\fi
```

Requires package ucs at end of including inputenc package, if still in preamble.

```
\ifx\AtEndOfPackage\undefined\else
\ifx\@nodocument\relax\else\AtEndOfPackage{\RequirePackage{ucs}}\fi%
\fi
```

```
\def\utf@viii@err#1{%
  \PackageError{utf8x}{Character \number#1 \uc@spc appeared alone}{%
    Characters 128-191 are only allowed as arguments to characters 194-244}}
\def\utf@viii@xnum#1#2\utf@viii@err#3#4\@nil{%
  \ifx\empty#3%
  \count#1=-1\relax
  \PackageError{utf8x}{Malformed UTF-8 sequence}{%
    If the character is an argument, put it in {}}\else
  \count#1=#3\fi}
\def\utf@viii@undef#1#2#3#4{%
  \begingroup
  \count0=#1\relax
  \ifx#3\@nil  % Two-byte sequences
  \expandafter\utf@viii@xnum\expandafter1#2\empty\empty\empty\empty\empty\empty\empty\empty\
  \ifnum\count1=-1 \count0=192\count1="1007D\fi
  \multiply\count0by64\relax
  \advance\count0by\count1\relax
  \advance\count0by-12416\relax
  \else
  \ifx#4\@nil  % Three-byte sequences
  \expandafter\utf@viii@xnum\expandafter1#2\empty\empty\empty\empty\empty\empty\empty\empty\
  \expandafter\utf@viii@xnum\expandafter2#3\empty\empty\empty\empty\empty\empty\empty\empty\
  \ifnum\count1=-1 \count0=224\count1=128\count2="1007D\fi
  \ifnum\count2=-1 \count0=224\count1=128\count2="1007D\fi
  \multiply\count0by64\relax
  \advance\count0by\count1\relax
  \multiply\count0by64\relax
  \advance\count0by\count2\relax
  \advance\count0by-925824\relax
  \else  % Four-byte sequences
  \expandafter\utf@viii@xnum\expandafter1#2\empty\empty\empty\empty\empty\empty\empty\empty\
  \expandafter\utf@viii@xnum\expandafter2#3\empty\empty\empty\empty\empty\empty\empty\empty\
  \expandafter\utf@viii@xnum\expandafter3#4\empty\empty\empty\empty\empty\empty\empty\empty\
  \ifnum\count1=-1 \count0=240\count1=128\count2=128\count3="1007D\fi
  \ifnum\count2=-1 \count0=240\count1=128\count2=128\count3="1007D\fi
  \ifnum\count3=-1 \count0=240\count1=128\count2=128\count3="1007D\fi
  \multiply\count0by64%
  \advance\count0by\count1%
  \multiply\count0by64%
  \advance\count0by\count2%
  \multiply\count0by64%
  \advance\count0by\count3%
  \advance\count0by-"3C82080\relax
  \fi\fi
  \begingroup\expandafter\utf@viii@map\expandafter{\number\count0}\endgroup
  \expandafter\endgroup
```

```
  \expandafter\unichar\expandafter{\number\count0}}%
\def\utf@viii@make#1#2#3#4#5#6{%
 \count255=#1\relax
 \loop\ifnum\count255<#2\relax
 \catcode\count255\active
 \begingroup
   \uccode`\~\count255%
   \uccode`\u`\u%
   \uppercase{%
 \endgroup
   \protected\edef~%
 #3{\noexpand\expandafter\noexpand\ifx\noexpand\csname u8-\number\count255-#4\noexpand\endcs
   \begingroup
```

In case `\let` is not executed, this (until ===) expands to `\let\relax\relax`, otherwise we have `\let\utf@viii@undeferr\@gobble` Number of 's must equal number of args of `\utf@viii@undef`

```
      \let\noexpand\utf@viii@undeferr
      \noexpand\@gobble\noexpand\empty\noexpand\empty
      \noexpand\empty\noexpand\empty\noexpand\@gobbletwo\relax\relax
      % ===
   \noexpand\expandafter\endgroup
   % If \let not executed: \utf@viii@undeferr is called
   % otherwise: \utf@viii@undef.
   \noexpand\utf@viii@undeferr{\noexpand\string\noexpand~\noexpand\string#6}%
     \noexpand\utf@viii@undef{\number\count255}#5%
 \noexpand\else
   \noexpand\expandafter\noexpand\unichar\noexpand\expandafter{%
     \noexpand\csname u8-\number\count255-#4\noexpand\endcsname}\noexpand\fi}}%
 \advance\count255by1\relax
 \repeat}%
\def\restore@utf@viii@actives{%
  \let\@inpenc@test\relax
  \utf@viii@make{194}{224}{####1}{\noexpand\string####1}{{####1}\noexpand\@nil\noexpand\@nil
  \utf@viii@make{224}{240}{####1####2}{\noexpand\string####1\noexpand\string####2}{{####1}{#
  \utf@viii@make{240}{245}{####1####2####3}{\noexpand\string####1\noexpand\string####2\noexp
%
  \count255=128\relax
  \loop\ifnum\count255<192\relax
  \catcode\count255\active
  \begingroup
    \uccode`\~\count255 %SPACE
    \uppercase{%
  \endgroup
    \protected\edef~}%
  {\noexpand\utf@viii@err{\number\count255}}%
 \advance\count255by1\relax
 \repeat}%
\def\utf@viii@map#1{%
  \begingroup
  \count0=#1\divide\count0by64\relax
  \ifnum#1<"80\relax
  % ASCII is not handled by utf8x.def
```

```
  \else\ifnum#1<"800\relax
    \count1=-\count0\multiply\count1by64\advance\count1by#1\relax
    \advance\count0by192\advance\count1by128\relax
    \begingroup
      \lccode`\B=\count1 %SPACE
      \lowercase{%
    \endgroup
%       \tracingassigns=3 \tracingonline=3
      \expandafter\gdef\csname u8-\number\count0-B\endcsname}{#1}%
  \else\ifnum#1<"10000\relax
    \count2=-\count0\multiply\count2by64\advance\count2by#1\relax
    \divide\count0by64 %SPACE
    \count1=-\count0\multiply\count1by4096\advance\count1by#1%
    \divide\count1by64%
    \advance\count0by224\advance\count1by128\advance\count2by128 %SPACE
    \begingroup
      \lccode`\B=\count1 %SPACE
      \lccode`\C=\count2 %SPACE
      \lowercase{%
    \endgroup
      \expandafter\gdef\csname u8-\number\count0-BC\endcsname}{#1}%
  \else\ifnum#1<"110000 %SPACE
    \count3=-\count0\multiply\count3by64\advance\count3by#1\relax
    \divide\count0by64 %SPACE
    \count2=-\count0\multiply\count2by4096\advance\count2by#1%
    \divide\count2by64%
    \divide\count0by64 %SPACE
    \count1=-\count0\multiply\count1by262144\advance\count1by#1%
    \divide\count1by4096 %SPACE
%     \typeout{\number#1=\number\count0*262144+\number\count1*4096+\number\count2*64+\number\
    \advance\count0by240\advance\count1by128%
    \advance\count2by128\advance\count3by128 %SPACE
    \begingroup
      \lccode`\B=\count1 %SPACE
      \lccode`\C=\count2 %SPACE
      \lccode`\D=\count3 %SPACE
      \lowercase{%
    \endgroup
      \expandafter\gdef\csname u8-\number\count0-BCD\endcsname}{#1}%
  \else
    \PackageWarning{utf8x}{Invalid code position \number#1 \uc@spc
      defined,\MessageBreak unrepresentable in UTF-8}%
  \fi\fi\fi\fi
  \endgroup
}
\begingroup
  \lccode`\A=`\{\lccode`\B=`\}\lccode`\C=`\\%
  \lccode`\P=`\P\lccode`\U=`\U%
  \lowercase{%
\endgroup
  \def\utf@viii@undeferr#1#2#3#4#5#6{%
    \ifx\@gobble#1\else[Please insert CPrerenderUnicodeA#1B into preamble]\fi}}
```

Checks (at `\begin{document}`) whether some utf8-chars have been redefined (e.g.

by polutonikogreek.ldf). Warns and corrects if necessary.

```
\ifx\AtBeginDocument\undefined\else
  \ifx\@nodocument\relax\else
    \AtBeginDocument{%
    \begingroup
    \expandafter\def\expandafter\temp@a\expandafter#\expandafter1%
      \string\utf@viii@#2\@nil{%
        \ifx\@nil#2\@nil\count2\count0\else\count1\count0\fi}%
    \count0=128 \count1=0 \count2=0 %SPACE
    \loop\ifnum\count0<245 %SPACE
    \ifnum\count0=192 \advance\count0by2 \fi
    \lccode`\~\count0 %SPACE
    \ifnum\catcode\count0=13 %SPACE
      \lowercase{%
      \expandafter\expandafter\expandafter\temp@a\expandafter\meaning\expandafter~%
        \string\utf@viii@\@nil}%
    \else
      \count2\count0\fi
    \advance\count0by1 %SPACE
    \repeat
    \ifnum\count1=0 \else\ifnum\count2=0 \else
      \PackageWarning{utf8x.def}{Character(s) \number\count2\space\space
        etc. got redefined somewhere.\MessageBreak
        Restoring to its utf8x-meaning}%
      \aftergroup\restore@utf@viii@actives
    \fi\fi
    \endgroup}%
  \fi
\fi
```

Restore `@`

```
\catcode`\@=\count255\relax
\csname restore@utf@viii@actives\endcsname
%
%
```

⟨/utf8x.def⟩

## 3.4 File `ucsencs.def`

```
⟨*ucsencs.def⟩
\ifx\ProvidesFile\undefined\else
\ProvidesFile{ucsencs.def}[2011/01/21 Fixes to fontencodings LGR, T3]
\fi
\expandafter\edef\csname uc@temp@d\endcsname{%
  \noexpand\catcode`\noexpand\@=\number\catcode`\@\relax
  \noexpand\catcode`\noexpand\^=\number\catcode`\^\relax
  \noexpand\catcode`\noexpand\"=\number\catcode`\"\relax
  \noexpand\catcode1=\number\catcode1\relax
  \noexpand\catcode2=\number\catcode2\relax
}%
\catcode`\@11
\catcode`\"12
\ifx\@backslashchar\undefined
  \edef\@backslashchar{\expandafter\@gobble\string\\}\fi
```

```
\catcode`\^7
\@tempcnta\catcode1
\@tempcntb\catcode2
\catcode1=13\relax
\def\uc@temp@c#1
{}%
\def^^A#1{%
  \let\uc@temp@a\undefined
%  \ifx#1\newcommand\let\uc@temp@a\providecommand\fi
  \ifx#1\def\let\uc@temp@a\thr@@\fi
  \ifx#1\DeclareTextSymbol\let\uc@temp@a\@ne\fi
  \ifx#1\DeclareTextComposite\let\uc@temp@a\tw@\fi
  \ifx#1\DeclareTextCommand\let\uc@temp@a\@ne\fi
  \ifx#1\DeclareTextAccent\let\uc@temp@a\@ne\fi
  \ifx#1\DeclareTextCompositeCommand\let\uc@temp@a\tw@\fi
  \ifx#1\typeout\let\uc@temp@a\typeout\fi
  \ifx\uc@temp@a\@ne
    \def\uc@temp@a##1##2{%
      \expandafter\ifx\csname ##2\string##1\endcsname\relax
        \expandafter#1%
      \else
        \wlog{##2\string##1 already defined.}%
        \expandafter\uc@temp@c
      \fi##1{##2}}%
  \fi
  \ifx\uc@temp@a\tw@
    \def\uc@temp@a##1##2##3{%
      \expandafter\ifx\csname\@backslashchar##2\string##1-\string##3\endcsname\relax
        \expandafter#1%
      \else
        \wlog{\@backslashchar##2\string##1-\string##3 already defined.}%
        \expandafter\uc@temp@c
      \fi##1{##2}##3}%
  \fi
  \ifx\uc@temp@a\thr@@
    \def\uc@temp@a##1{%
      \ifx##1\undefined
        \expandafter\def\expandafter##1%
      \else
        \expandafter\def\expandafter\uc@temp@a
      \fi}
  \fi
  \ifx\uc@temp@a\undefined
    \errmessage{ucsencs.def: Dont know how to handle \string#1}%
    \let\uc@temp@a#1%
  \fi
  \uc@temp@a}
\def\uc@temp@b#1{\expandafter\ifx\csname T@#1\endcsname\relax
  \catcode1=14\relax\catcode2=14\relax
  \else\catcode1=13\relax\catcode2=9\relax\fi}%
\ifx\autofe@mode\undefined\else\ifx\autofe@mode0\else\let\autofe@mode1\fi\fi
```

`\textascii` is a wrapper for outputting ASCII chars in the range 0x21–0x7e characters `&#%` must be preceded by `\` (i.e. `\textascii\&`), all other characters

must be given as is (i.e. `\textascii:` or `\textascii A`).

```
\ProvideTextCommandDefault{\textascii}[1]{\@textascii{#1}}%
\def\@textascii#1{\expandafter\@@textascii\string#1\empty\@nil}%
\def\@@textascii#1#2\@nil{\ifx#2\empty#1\else#2\fi}%
\def\textasciiencoding{\encodingdefault}%
\def\@textascii@switch#1{\begingroup\@use@text@encoding{\textasciiencoding}\def\textasciienc
\let\uc@text@composite\@text@composite
\def\@text@composite#1#2#3\@text@composite{%
  \ifx\textascii#2\expandafter\@secondoftwo\else\expandafter\@firstoftwo\fi
  {\uc@text@composite{#1}{#2}{#3}\@text@composite}%
  {\uc@text@composite{#1}#3\@text@composite}}%
%
\uc@temp@b{LGR}
```

Commands for an encoding-portable access to Greek characters in LGR follow. The accents are used as follows (the Unicode character codes give the according non combining characters as examples):

- `\'`: Tonos (U+0384).
- `\greekoxia`: Oxia (U+1FFD). In the LGR encoding it is identical to `\'`: (it calls the latter), but fonts may want to render a tonos and an oxia differently, so another name has been reserved for the oxia.
- `\`: Varia (U+1FEF).
- `\~`: Perispomeni (U+1FC0).
- `\"`: Dialytika (U+00A8)
- `\greeksubiota`: Subscript iota (U+1FBE). Both for capital and small letters.
- `\greekdasia`: Dasia (U+1FFE).
- `\greekpsili`: Psili (U+1FBF).
- `\u`: Vrachy (U+0306).
- `\=`: Macron (U+0304).
- `\greekdasiaoxia`: Dasia and oxia (U+1FDE)
- `\greekdasiavaria`: Dasia and varia (U+1FDD)
- `\greekdasiaperispomeni`: Perispomeni over dasia (U+1FDF)
- `\greekpsilioxia`: Psili and oxia (U+1FCE)
- `\greekpsilivaria`: Psili and varia (U+1FCD)
- `\greekpsiliperispomeni`: Perispomeni over psili (U+1FCF)
- `\greekdialytikatonos`: Tonos over dialytika (U+0385)
- `\greekdialytikaoxia`: Tonos over oxia (U+1FEE) (here identical to `\greekdialytikatonos`)

- \greekdialytikavaria: Varia over dialytika (U+1FED)
- \greekdialytikaperispomeni: Perispomeni over dialytika (U+1FC1)
- \greekoxiaiota: Oxia + subscript iota
- \greekvariaiota: Varia + subscript iota
- \greekpsiliiota: Psili + subscript iota
- \greekdasiaiota: Dasia + subscript iota
- \greekperispomeniiota: Perispomeni + subscript iota
- \greekdasiaoxiaiota: Dasia and oxia + subscript iota
- \greekdasiavariaiota: Dasia and varia + subscript iota
- \greekdasiaperispomeniiota: Perispomeni over dasia + subscript iota
- \greekpsilioxiaiota: Psili and oxia + subscript iota
- \greekpsilivariaiota: Psili and varia + subscript iota
- \greekpsiliperispomeniiota: Perispomeni over psili + subscript iota

```
% 00 hyphen
% 01 TODO
^^A\DeclareTextCommand{\textascii}{LGR}[1]{\@textascii@switch{#1}}
^^A\DeclareTextSymbol{\textpentedeka}{LGR}{2}
^^A\DeclareTextSymbol{\textpentehkaton}{LGR}{3}
^^A\DeclareTextSymbol{\textpenteqilioi}{LGR}{4}
^^A\DeclareTextSymbol{\textpentemuria}{LGR}{5}
^^A\DeclareTextSymbol{\textstigma}{LGR}{6}
^^A\DeclareTextSymbol{\textstigmavariant}{LGR}{7}
% 08 adscript iota (done by \textsubiota, "7C)
% 09--0B see 7C (\textsubiota)
% 0C--11 TODO
^^A\DeclareTextSymbol{\textqoppa}{LGR}{"12}
^^A\DeclareTextSymbol{\textqoppavariant}{LGR}{"13}
% 14--17 TODO
^^A\DeclareTextSymbol{\texteuro}{LGR}{"18}
^^A\DeclareTextSymbol{\textperthousand}{LGR}{"19}
% 1A TODO
^^A\DeclareTextSymbol{\textsanpi}{LGR}{"1B}
^^A\DeclareTextSymbol{\textquoteleft}{LGR}{"1C}
^^A\DeclareTextSymbol{\textquoteright}{LGR}{"1D}
^^A\DeclareTextAccent{\u}{LGR}{"1E}
^^A\DeclareTextAccent{\=}{LGR}{"1F}
^^A\DeclareTextAccent{\textdialytikaperispomeni}{LGR}{"20}
% 21 exclamation mark
^^A\DeclareTextAccent{\"}{LGR}{"22}
^^A\DeclareTextAccent{\textdialytikatonos}{LGR}{"23}
^^A\DeclareTextCommand{\textdialytikaoxia}{LGR}[1]{\textdialytikatonos{#1}}
^^A\DeclareTextAccent{\textdialytikavaria}{LGR}{"24}
^^A\DeclareTextSymbol{\textpercent}{LGR}{"25}
^^A\DeclareTextSymbol{\textperiodcentered}{LGR}{"26}
```

```
^^A\DeclareTextAccent{\'}{LGR}{"27}
^^A\DeclareTextCommand{\textoxia}{LGR}[1]{\@tabaccludge'{#1}}
^^A\DeclareTextSymbol{\textparenleft}{LGR}{"28}
^^A\DeclareTextSymbol{\textparenright}{LGR}{"29}
% 2A asterisk
% 2B plus
% 2C comma
% 2D hyphen
% 2E period
% 2F slash
% 30--39 digits 0-9
% 3A colon
^^A\DeclareTextSymbol{\textanoteleia}{LGR}{"3B}
^^A\DeclareTextAccent{\textdasia}{LGR}{"3C}
% 3D equal
^^A\DeclareTextAccent{\textpsili}{LGR}{"3E}
^^A\DeclareTextSymbol{\textquestion}{LGR}{"3F}
^^A\DeclareTextAccent{\textdasiaperispomeni}{LGR}{"40}
^^A\DeclareTextSymbol{\textAlpha}{LGR}{"41}
^^A\DeclareTextSymbol{\textBeta}{LGR}{"42}
^^A\DeclareTextAccent{\textdasiavaria}{LGR}{"43}
^^A\DeclareTextSymbol{\textDelta}{LGR}{"44}
^^A\DeclareTextSymbol{\textEpsilon}{LGR}{"45}
^^A\DeclareTextSymbol{\textPhi}{LGR}{"46}
^^A\DeclareTextSymbol{\textGamma}{LGR}{"47}
^^A\DeclareTextSymbol{\textEta}{LGR}{"48}
^^A\DeclareTextSymbol{\textIota}{LGR}{"49}
^^A\DeclareTextSymbol{\textTheta}{LGR}{"4A}
^^A\DeclareTextSymbol{\textKappa}{LGR}{"4B}
^^A\DeclareTextSymbol{\textLambda}{LGR}{"4C}
^^A\DeclareTextSymbol{\textMu}{LGR}{"4D}
^^A\DeclareTextSymbol{\textNu}{LGR}{"4E}
^^A\DeclareTextSymbol{\textOmicron}{LGR}{"4F}
^^A\DeclareTextSymbol{\textPi}{LGR}{"50}
^^A\DeclareTextSymbol{\textChi}{LGR}{"51}
^^A\DeclareTextSymbol{\textRho}{LGR}{"52}
^^A\DeclareTextSymbol{\textSigma}{LGR}{"53}
^^A\DeclareTextSymbol{\textTau}{LGR}{"54}
^^A\DeclareTextSymbol{\textUpsilon}{LGR}{"55}
^^A\DeclareTextAccent{\textdasiaoxia}{LGR}{"56}
^^A\DeclareTextSymbol{\textOmega}{LGR}{"57}
^^A\DeclareTextSymbol{\textXi}{LGR}{"58}
^^A\DeclareTextSymbol{\textPsi}{LGR}{"59}
^^A\DeclareTextSymbol{\textZeta}{LGR}{"5A}
% 5B left bracket '['
^^A\DeclareTextAccent{\textpsiliperispomeni}{LGR}{"5C}
% 5D right bracket
^^A\DeclareTextAccent{\textpsilioxia}{LGR}{"5E}
^^A\DeclareTextAccent{\textpsilivaria}{LGR}{"5F}
^^A\DeclareTextAccent{\`}{LGR}{"60}
^^A\DeclareTextSymbol{\textalpha}{LGR}{"61}
^^A\DeclareTextSymbol{\textbeta}{LGR}{"62}
^^A\DeclareTextSymbol{\textvarsigma}{LGR}{"63}
^^A\DeclareTextSymbol{\textdelta}{LGR}{"64}
```

```
^^A\DeclareTextSymbol{\textepsilon}{LGR}{"65}
^^A\DeclareTextSymbol{\textphi}{LGR}{"66}
^^A\DeclareTextSymbol{\textgamma}{LGR}{"67}
^^A\DeclareTextSymbol{\texteta}{LGR}{"68}
^^A\DeclareTextSymbol{\textiota}{LGR}{"69}
^^A\DeclareTextSymbol{\texttheta}{LGR}{"6A}
^^A\DeclareTextSymbol{\textkappa}{LGR}{"6B}
^^A\DeclareTextSymbol{\textlambda}{LGR}{"6C}
^^A\DeclareTextSymbol{\textmu}{LGR}{"6D}
^^A\DeclareTextSymbol{\textnu}{LGR}{"6E}
^^A\DeclareTextSymbol{\textomicron}{LGR}{"6F}
^^A\DeclareTextSymbol{\textpi}{LGR}{"70}
^^A\DeclareTextSymbol{\textchi}{LGR}{"71}
^^A\DeclareTextSymbol{\textrho}{LGR}{"72}
^^A\DeclareTextSymbol{\textautosigma}{LGR}{"73}
```

With the CB-fonts, `"73` is an automatic sigma. To force a mid sigma, I insert `\char"9B` afterwards (iff fontfamily start with `cm`). Whoever knows a better macro for `\textsigma`, please tell me.

```
^^B\ifx\lgr@sig@fix\undefined\def\lgr@sig@fix#1cm#2\@nil{\ifx!#1!\char"9B \fi}\fi
^^A\DeclareTextCommand{\textsigma}{LGR}{\char"73 \expandafter\lgr@sig@fix\f@family cm\@nil}
^^A\DeclareTextSymbol{\texttau}{LGR}{"74}
^^A\DeclareTextSymbol{\textupsilon}{LGR}{"75}
% 76 undefined
^^A\DeclareTextSymbol{\textomega}{LGR}{"77}
^^A\DeclareTextSymbol{\textxi}{LGR}{"78}
^^A\DeclareTextSymbol{\textpsi}{LGR}{"79}
^^A\DeclareTextSymbol{\textzeta}{LGR}{"7A}
^^A\DeclareTextSymbol{\guillemotleft}{LGR}{"7B}
% 7C the following commands:
^^A\DeclareTextCommand{\textsubiota}{LGR}[1]{#1|}
^^A\DeclareTextCommand{\textpsiliiota}{LGR}[1]{\textpsili{#1}|}
^^A\DeclareTextCommand{\textdasiaiota}{LGR}[1]{\textdasia{#1}|}
^^A\DeclareTextCommand{\textvariaiota}{LGR}[1]{\@tabacckludge`{#1}|}
^^A\DeclareTextCommand{\textoxiaiota}{LGR}[1]{\@tabacckludge'{#1}|}
^^A\DeclareTextCommand{\textpsilivariaiota}{LGR}[1]{\textpsilivaria{#1}|}
^^A\DeclareTextCommand{\textdasiavariaiota}{LGR}[1]{\textdasiavaria{#1}|}
^^A\DeclareTextCommand{\textpsilioxiaiota}{LGR}[1]{\textpsilioxia{#1}|}
^^A\DeclareTextCommand{\textdasiaoxiaiota}{LGR}[1]{\textdasiaoxia{#1}|}
^^A\DeclareTextCommand{\textperispomeniiota}{LGR}[1]{\@tabacckludge~{#1}|}
^^A\DeclareTextCommand{\textpsiliperispomeniiota}{LGR}[1]{\textpsiliperispomeni{#1}|}
^^A\DeclareTextCommand{\textdasiaperispomeniiota}{LGR}[1]{\textdasiaperispomeni{#1}|}
^^A\DeclareTextComposite{\textsubiota}{LGR}{\textAlpha}{9}
^^A\DeclareTextComposite{\textsubiota}{LGR}{\textEta}{"A}
^^A\DeclareTextComposite{\textsubiota}{LGR}{\textOmega}{"B}
^^A\DeclareTextSymbol{\guillemotright}{LGR}{"7D}
^^A\DeclareTextAccent{\~}{LGR}{"7E}
^^A\DeclareTextSymbol{\textemdash}{LGR}{"7F}
^^A\DeclareTextComposite{\`}{LGR}{\textalpha}{"80}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textalpha}{"81}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textalpha}{"82}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textalpha}{"83}
% 84--87 subiota combinations are created correctly
```

```
^^A\DeclareTextComposite{\'}{LGR}{\textalpha}{"88}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textalpha}{"89}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textalpha}{"8A}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textalpha}{"8B}
% 8C--8F subiota combinations are created correctly
^^A\DeclareTextComposite{\~}{LGR}{\textalpha}{"90}
^^A\DeclareTextComposite{\textdasiaperispomeni}{LGR}{\textalpha}{"91}
^^A\DeclareTextComposite{\textpsiliperispomeni}{LGR}{\textalpha}{"92}
^^A\DeclareTextSymbol{\textdigamma}{LGR}{"93}
% 94--96 subiota combinations are created correctly
% 97 TODO
^^A\DeclareTextComposite{\`}{LGR}{\texteta}{"98}
^^A\DeclareTextComposite{\textdasia}{LGR}{\texteta}{"99}
^^A\DeclareTextComposite{\textpsili}{LGR}{\texteta}{"9A}
% 9B undefined
% 9C--9E subiota combinations are created correctly
% 9F undefined
^^A\DeclareTextComposite{\'}{LGR}{\texteta}{"A0}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\texteta}{"A1}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\texteta}{"A2}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\texteta}{"A3}
% A4--A7 subiota combinations are created correctly
^^A\DeclareTextComposite{\~}{LGR}{\texteta}{"A8}
^^A\DeclareTextComposite{\textdasiaperispomeni}{LGR}{\texteta}{"A9}
^^A\DeclareTextComposite{\textpsiliperispomeni}{LGR}{\texteta}{"AA}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\texteta}{"AB}
% AC--AF subiota combinations are created correctly
^^A\DeclareTextComposite{\`}{LGR}{\textomega}{"B0}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textomega}{"B1}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textomega}{"B2}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textomega}{"B3}
% B4--B7 subiota combinations are created correctly
^^A\DeclareTextComposite{\'}{LGR}{\textomega}{"B8}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textomega}{"B9}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textomega}{"BA}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textomega}{"BB}
% BC--BF subiota combinations are created correctly
^^A\DeclareTextComposite{\~}{LGR}{\textomega}{"C0}
^^A\DeclareTextComposite{\textdasiaperispomeni}{LGR}{\textomega}{"C1}
^^A\DeclareTextComposite{\textpsiliperispomeni}{LGR}{\textomega}{"C2}
^^A\DeclareTextSymbol{\textDigamma}{LGR}{"C3}
% C4--C6 subiota combinations are created correctly
% C7 undefined
^^A\DeclareTextComposite{\`}{LGR}{\textiota}{"C8}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textiota}{"C9}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textiota}{"CA}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textiota}{"CB}
^^A\DeclareTextComposite{\`}{LGR}{\textupsilon}{"CC}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textupsilon}{"CD}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textupsilon}{"CE}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textupsilon}{"CF}
^^A\DeclareTextComposite{\'}{LGR}{\textiota}{"D0}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textiota}{"D1}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textiota}{"D2}
```

```
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textiota}{"D3}
^^A\DeclareTextComposite{\'}{LGR}{\textupsilon}{"D4}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textupsilon}{"D5}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textupsilon}{"D6}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textupsilon}{"D7}
^^A\DeclareTextComposite{\~}{LGR}{\textiota}{"D8}
^^A\DeclareTextComposite{\textdasiaperispomeni}{LGR}{\textiota}{"D9}
^^A\DeclareTextComposite{\textpsiliperispomeni}{LGR}{\textiota}{"DA}
^^A\DeclareTextComposite{\"}{LGR}{\textIota}{"DB}
^^A\DeclareTextComposite{\~}{LGR}{\textupsilon}{"DC}
^^A\DeclareTextComposite{\textdasiaperispomeni}{LGR}{\textupsilon}{"DD}
^^A\DeclareTextComposite{\textpsiliperispomeni}{LGR}{\textupsilon}{"DE}
^^A\DeclareTextComposite{\"}{LGR}{\textUpsilon}{"DF}
^^A\DeclareTextComposite{\`}{LGR}{\textepsilon}{"E0}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textepsilon}{"E1}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textepsilon}{"E2}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textepsilon}{"E3}
^^A\DeclareTextComposite{\`}{LGR}{\textomicron}{"E4}
^^A\DeclareTextComposite{\textdasia}{LGR}{\textomicron}{"E5}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textomicron}{"E6}
^^A\DeclareTextComposite{\textdasiavaria}{LGR}{\textomicron}{"E7}
^^A\DeclareTextComposite{\'}{LGR}{\textepsilon}{"E8}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textepsilon}{"E9}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textepsilon}{"EA}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textepsilon}{"EB}
^^A\DeclareTextComposite{\'}{LGR}{\textomicron}{"EC}
^^A\DeclareTextComposite{\textdasiaoxia}{LGR}{\textomicron}{"ED}
^^A\DeclareTextComposite{\textpsilioxia}{LGR}{\textomicron}{"EE}
^^A\DeclareTextComposite{\textpsilivaria}{LGR}{\textomicron}{"EF}
^^A\DeclareTextComposite{\"}{LGR}{\textiota}{"F0}
^^A\DeclareTextComposite{\textdialytikavaria}{LGR}{\textiota}{"F1}
^^A\DeclareTextComposite{\textdialytikatonos}{LGR}{\textiota}{"F2}
^^A\DeclareTextComposite{\textdialytikaperispomeni}{LGR}{\textiota}{"F3}
^^A\DeclareTextComposite{\"}{LGR}{\textupsilon}{"F4}
^^A\DeclareTextComposite{\textdialytikavaria}{LGR}{\textupsilon}{"F5}
^^A\DeclareTextComposite{\textdialytikatonos}{LGR}{\textupsilon}{"F6}
^^A\DeclareTextComposite{\textdialytikaperispomeni}{LGR}{\textupsilon}{"F7}
% F8--FA subiota combinations are created correctly
^^A\DeclareTextComposite{\textdasia}{LGR}{\textrho}{"FB}
^^A\DeclareTextComposite{\textpsili}{LGR}{\textrho}{"FC}
% FD undefined
^^A\DeclareTextSymbol{\textdexiakeraia}{LGR}{"FE}
^^A\DeclareTextSymbol{\textaristerikeraia}{LGR}{"FF}
```

Some composites follow, which are intuitively accents, but must be generated as ligatures in the CB fonts:

```
^^A\DeclareTextCompositeCommand{\`}{LGR}{\textAlpha}{`A}
^^A\DeclareTextCompositeCommand{\'}{LGR}{\textAlpha}{'A}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textAlpha}{>A}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textAlpha}{<A}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textAlpha}{\char"5F A}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textAlpha}{CA}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textAlpha}{\char"5E A}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textAlpha}{VA}
```

```
^^A\DeclareTextCompositeCommand{\textpsiliperispomeni}{LGR}{\textAlpha}{\char"5C A}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeni}{LGR}{\textAlpha}{@A}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textEpsilon}{‘E}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textEpsilon}{’E}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textEpsilon}{>E}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textEpsilon}{<E}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textEpsilon}{\char"5F E}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textEpsilon}{CE}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textEpsilon}{\char"5E E}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textEpsilon}{VE}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textEta}{‘H}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textEta}{’H}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textEta}{>H}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textEta}{<H}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textEta}{\char"5F H}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textEta}{CH}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textEta}{\char"5E H}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textEta}{VH}
^^A\DeclareTextCompositeCommand{\textpsiliperispomeni}{LGR}{\textEta}{\char"5C H}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeni}{LGR}{\textEta}{@H}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textIota}{‘I}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textIota}{’I}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textIota}{>I}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textIota}{<I}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textIota}{\char"5F I}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textIota}{CI}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textIota}{\char"5E I}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textIota}{VI}
^^A\DeclareTextCompositeCommand{\textpsiliperispomeni}{LGR}{\textIota}{\char"5C I}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeni}{LGR}{\textIota}{@I}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textOmicron}{’O}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textOmicron}{‘O}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textOmicron}{>O}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textOmicron}{<O}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textOmicron}{\char"5F O}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textOmicron}{CO}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textOmicron}{\char"5E O}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textOmicron}{VO}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textUpsilon}{‘U}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textUpsilon}{’U}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textUpsilon}{<U}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textUpsilon}{CU}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textUpsilon}{VU}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeni}{LGR}{\textUpsilon}{@U}
^^A\DeclareTextCompositeCommand{\’}{LGR}{\textOmega}{’W}
^^A\DeclareTextCompositeCommand{\‘}{LGR}{\textOmega}{‘W}
^^A\DeclareTextCompositeCommand{\textpsili}{LGR}{\textOmega}{>W}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textOmega}{<W}
^^A\DeclareTextCompositeCommand{\textpsilivaria}{LGR}{\textOmega}{\char"5F W}
^^A\DeclareTextCompositeCommand{\textdasiavaria}{LGR}{\textOmega}{CW}
^^A\DeclareTextCompositeCommand{\textpsilioxia}{LGR}{\textOmega}{\char"5E W}
^^A\DeclareTextCompositeCommand{\textdasiaoxia}{LGR}{\textOmega}{VW}
^^A\DeclareTextCompositeCommand{\textpsiliperispomeni}{LGR}{\textOmega}{\char"5C W}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeni}{LGR}{\textOmega}{@W}
```

```
^^A\DeclareTextCompositeCommand{\textpsiliiota}{LGR}{\textOmega}{>W|}
^^A\DeclareTextCompositeCommand{\textdasiaiota}{LGR}{\textOmega}{<W|}
^^A\DeclareTextCompositeCommand{\textpsilivariaiota}{LGR}{\textOmega}{\char"5F W|}
^^A\DeclareTextCompositeCommand{\textdasiavariaiota}{LGR}{\textOmega}{CW|}
^^A\DeclareTextCompositeCommand{\textpsilioxiaiota}{LGR}{\textOmega}{\char"5E W|}
^^A\DeclareTextCompositeCommand{\textdasiaoxiaiota}{LGR}{\textOmega}{VW|}
^^A\DeclareTextCompositeCommand{\textpsiliperispomeniiota}{LGR}{\textOmega}{\char"5C W|}
^^A\DeclareTextCompositeCommand{\textdasiaperispomeniiota}{LGR}{\textOmega}{@W|}
^^A\DeclareTextCompositeCommand{\textdasia}{LGR}{\textRho}{<R}
```

Uppercase-lowercase mapping:

```
\ifx\@uclclist\undefined\else
^^A\def\update@uclc@with@text{%
^^B \expandafter\def\expandafter\@uclclist\expandafter
^^B  {\@uclclist
```

Not that mapping for `\textautosigma` must come last, otherwise `\MakeLowercase{\textSigma}` is not `\textautosigma`.

```
^^B    \textalpha\textAlpha \textbeta\textBeta \textdelta\textDelta
^^B    \textepsilon\textEpsilon \textphi\textPhi
^^B    \textgamma\textGamma \texteta\textEta \textiota\textIota
^^B    \texttheta\textTheta \textkappa\textKappa
^^B    \textlambda\textLambda \textmu\textMu \textnu\textNu
^^B    \textomicron\textOmicron \textpi\textPi \textchi\textChi
^^B    \textrho\textRho \textsigma\textSigma
^^B    \textvarsigma\textSigma \textautosigma\textSigma
^^B    \texttau\textTau \textupsilon\textUpsilon
^^B    \textomega\textOmega \textxi\textXi \textpsi\textPsi
^^B    \textzeta\textZeta \textdigamma\textDigamma}%
^^B \let\update@uclc@with@text\empty}
^^B\update@uclc@with@text
\fi
^^A\typeout{fontencoding LGR patched}
```

Patches for encoding T3 follow

```
\uc@temp@b{T3}
\def\ifxx#1#2{\toks255{#1==#2}\typeout{ifx:\the\toks255}\ifx#1#2}
```

Older TIPA versions (pre 1.0) do not have `\textscriptg`

```
^^A\DeclareTextSymbol{\textscriptg}{T3}{103}
^^A\DeclareTextCommand{\textascii}{T3}[1]{\ifx#1g\char164 \else\@textascii{#1}\fi}
^^A\typeout{fontencoding T3 patched}
```

Patches for encoding T5 follow

```
\uc@temp@b{T5}
^^A\DeclareTextCompositeCommand{\~}{T5}{\i}{\~i}
^^A\DeclareTextCompositeCommand{\`}{T5}{\i}{\`i}
^^A\DeclareTextCompositeCommand{\'}{T5}{\i}{\'i}
^^A\typeout{fontencoding T5 patched}
```

Patches for encoding T4 follow

```
\uc@temp@b{T4}
^^A\DeclareTextCommand\texthbar{T4}{\B h}
^^A\DeclareTextCommand\textHbar{T4}{\B H}
^^A\DeclareTextCommand\textbhook{T4}{\m b}
^^A\DeclareTextCommand\textBhook{T4}{\m B}
^^A\DeclareTextCommand\textdhook{T4}{\m d}
^^A\DeclareTextCommand\textDhook{T4}{\m D}
^^A\DeclareTextCommand\texteopen{T4}{\m e}
^^A\DeclareTextCommand\textEopen{T4}{\m E}
^^A\DeclareTextCommand\textschwa{T4}{\M e}
^^A\DeclareTextCommand\texteturned{T4}{\M e}
^^A\DeclareTextCommand\textEreversed{T4}{\M E}
^^A\DeclareTextCommand\textGammaafrican{T4}{\m G}
^^A\DeclareTextCommand\textgammalatinsmall{T4}{\m g}
^^A\DeclareTextCommand\textKhook{T4}{\m K}
^^A\DeclareTextCommand\textkhook{T4}{\m k}
^^A\DeclareTextCommand\textDafrican{T4}{\M D}
^^A\DeclareTextCommand\textdtail{T4}{\M d}
^^A\DeclareTextCommand\textTretroflexhook{T4}{\M T}
^^A\DeclareTextCommand\texttretroflexhook{T4}{\M t}
^^A\DeclareTextCommand\textOopen{T4}{\m O}
^^A\DeclareTextCommand\textoopen{T4}{\m o}
^^A\DeclareTextCommand\textIotaafrican{T4}{\m I}
^^A\DeclareTextCommand\textiotalatin{T4}{\m i}
^^A\DeclareTextCommand\textFhook{T4}{\m F}
^^A\DeclareTextCommand\textflorin{T4}{\m f}
^^A\DeclareTextCommand\textYhook{T4}{\m Y}
^^A\DeclareTextCommand\textyhook{T4}{\m y}
^^A\DeclareTextCommand\textEsh{T4}{\m S}
^^A\DeclareTextCommand\textesh{T4}{\m s}
^^A\DeclareTextCommand\textThook{T4}{\m T}
^^A\DeclareTextCommand\textthook{T4}{\m t}
^^A\DeclareTextCommand\textEzh{T4}{\m Z}
^^A\DeclareTextCommand\textezh{T4}{\m z}
^^A\DeclareTextCommand\textChook{T4}{\m C}
^^A\DeclareTextCommand\textchook{T4}{\m c}
^^A\DeclareTextCommand\textTbar{T4}{\B T}
^^A\DeclareTextCommand\texttbar{T4}{\B t}
^^A\DeclareTextCommand\textVhook{T4}{\m V}
^^A\DeclareTextCommand\textvhook{T4}{\m v}
^^A\DeclareTextCommand\textPhook{T4}{\m P}
^^A\DeclareTextCommand\textphook{T4}{\m p}
^^A\DeclareTextCommand\textNhookleft{T4}{\m J}
^^A\DeclareTextCommand\textnhookleft{T4}{\m j}
^^A\DeclareTextCommand\texttesh{T4}{\tsh}
^^A\DeclareTextCompositeCommand{\~}{T4}{\textEopen}{\T E}
^^A\DeclareTextCompositeCommand{\~}{T4}{\texteopen}{\T e}
^^A\DeclareTextCompositeCommand{\~}{T4}{\textOopen}{\T O}
^^A\DeclareTextCompositeCommand{\~}{T4}{\textoopen}{\T o}
^^A\DeclareTextSymbol\textexclamdown{T4}{'275}
^^A\DeclareTextSymbol\textquestiondown{T4}{'276}
^^A\DeclareTextAccent\textdblgravecmb{T4}{'237}
```

```
^^A\typeout{fontencoding T4 patched}
```

Clean up.

```
\uc@temp@d
%
%
⟨/ucsencs.def⟩
```

# 4 Contributed files

These files are needed by some glyph macros. They are not really part of the UCS package, but they stay here until available somewhere else.

## 4.1 File `autofe.sty`

```
⟨*autofe.sty⟩
\ProvidesPackage{autofe}[2002/12/17 Automatic switching of fontencodings]

\let\autofe@mode1

\let\autofe@DeclareTextCommand\DeclareTextCommand
\def\DeclareTextCommand{\autofe@parse@declaretextcommand\autofe@DeclareTextCommand}
\let\autofe@ProvideTextCommand\ProvideTextCommand
\def\ProvideTextCommand{\autofe@parse@declaretextcommand\autofe@ProvideTextCommand}
\let\autofe@DeclareTextSymbol\DeclareTextSymbol

\def\autofe@parse@declaretextcommand#1#2#3{%
  \@ifnextchar[%
  {\autofe@parse@declaretextcommand@a{#1}{#2}{#3}}%
  {\autofe@parse@declaretextcommand@dd{#1}{#2}{#3}}}
\def\autofe@parse@declaretextcommand@a#1#2#3[#4]{%
  \@ifnextchar[%
  {\autofe@parse@declaretextcommand@aa{#1}{#2}{#3}{#4}}%
  {\autofe@parse@declaretextcommand@ad{#1}{#2}{#3}{#4}}}


\def\autofe@parse@declaretextcommand@aa#1#2#3#4[#5]#6{%
  %{\toks255{#1{#2}{#3}[#4][#5]{#6}}\typeout{Running \the\toks255}}%
  \ifx\autofe@mode0\else\expandafter\autofe@defdef\expandafter{#3}{\autofe@ProvideTextComman
  #1{#2}{#3}[#4][#5]{#6}%
}
\def\autofe@parse@declaretextcommand@ad#1#2#3#4#5{%
  %{\toks255{#1{#2}{#3}[#4]{#5}}\typeout{Running \the\toks255}}%
  \ifx\autofe@mode0\else\expandafter\autofe@defdef\expandafter{#3}{\autofe@ProvideTextComman
  #1{#2}{#3}[#4]{#5}%
}
\def\autofe@parse@declaretextcommand@dd#1#2#3#4{%
  %{\toks255{#1{#2}{#3}{#4}}\typeout{Running \the\toks255}}%
  \ifx\autofe@mode0\else\expandafter\autofe@defdef\expandafter{#3}{#1{#2}{?}}{#4}\fi
  #1{#2}{#3}{#4}%
}
```

```
\def\DeclareTextSymbol#1#2#3{%
  %{\toks255{\autofe@DeclareTextSymbol{#1}{#2}{#3}}\typeout{Running \the\toks255}}%
  \ifx\autofe@mode0\else\expandafter\autofe@defdef\expandafter{#2}{\autofe@ProvideTextComman
  \autofe@DeclareTextSymbol{#1}{#2}{#3}%
}

\def\autofe@defdef#1#2#3{%
  \begingroup
    \def\temp@a{#1}\def\temp@b{?}%
    \ifx\temp@a\temp@b
      \let\temp@a\@gobbletwo
    \else
      \ifx\autofe@mode1%
        \let\temp@a\@firstoftwo
      \else
        \let\temp@a\@secondoftwo
      \fi
    \fi
  \expandafter\endgroup
  \temp@a
  {#2{{\fontencoding{#1}\selectfont#3}}}%
  {#2{\fontencoding{#1}\selectfont#3}}%
}

\def\autofe@options{}
\def\autofe@add@fe#1{\g@addto@macro\autofe@options{\RequirePackage[#1]{fontenc}}}
%\DeclareOption{global}{\PackageError{autofe}{Option global not supported yet}{Changing to l
\DeclareOption{global}{\g@addto@macro\autofe@options{\let\autofe@mode2}}
\DeclareOption{local}{\g@addto@macro\autofe@options{\let\autofe@mode1}}
\DeclareOption{off}{\g@addto@macro\autofe@options{\let\autofe@mode0}}
\DeclareOption*{\expandafter\autofe@add@fe\expandafter{\CurrentOption}}
\ProcessOptions*

\typeout{\meaning\autofe@options}
\autofe@options

\let\autofe@options\undefined
\let\autofe@add@fe\undefined

%
%
⟨/autofe.sty⟩
```

## 4.2 File cenccmn.tex

```
⟨*cenccmn.tex⟩
\ProvidesFile{cenccmn.tex}[2001/10/25
    Macros common to fontencodings C00, C40, C61]%
%\gdef\CJK@plane{***___SET_CJK@plane_before_using_fontencoding_%
%  \f@encoding___***}
\def\CJK@@empty#1{%
  \ifx\CJK@plane\undefined\def\mandatory@arg{cmr10}\else
  \edef\mandatory@arg{\mandatory@arg\CJK@plane}\fi%
  \empty@sfcnt#1%
```

```
  \xdef\font@name{\csname \curr@fontshape/\f@size/%
    \ifx\CJK@plane\undefined\else\CJK@plane\fi\endcsname}}
\def\CJK@@sub#1{%
  \expandafter\ifx\csname CJK@\mandatory@arg/\f@size\endcsname\relax
  \expandafter\gdef\csname CJK@\mandatory@arg/\f@size\endcsname{}%
  \sub@sfcnt#1%
  \else
  \sub@sfcnt\@gobble
  \fi}
\def\CJK@DNPgen{%
  \ifx\CJK@plane\undefined\def\external@font{cmr10}\else
  \edef\external@font{%
    \mandatory@arg\CJK@plane\f@size}\fi
  \xdef\font@name{%
    \csname \curr@fontshape/\f@size/%
    \ifx\CJK@plane\undefined\else\CJK@plane\fi\endcsname}}%
\def\CJK@DNP{%
  \ifx\CJK@plane\undefined\def\external@font{cmr10}\else
  \@tempdimb \f@size\p@
  \edef\external@font{%
    \mandatory@arg\CJK@plane\optional@arg\space at \the\@tempdimb}\fi
  \xdef\font@name{%
    \csname \curr@fontshape/\f@size/%
    \ifx\CJK@plane\undefined\else\CJK@plane\fi\endcsname\endcsname}}
%
\DeclareSizeFunction{CJK}{\CJK@@empty\@font@warning}
\DeclareSizeFunction{CJKb}{\CJK@@empty\@font@warning}
\DeclareSizeFunction{sCJK}{\CJK@@empty\@font@info}
\DeclareSizeFunction{sCJKb}{\CJK@@empty\@font@info}
\DeclareSizeFunction{CJKsub}{\CJK@@sub\@font@warning}
\DeclareSizeFunction{CJKssub}{\CJK@@sub\@font@info}
\DeclareSizeFunction{DNPgen}{\CJK@DNPgen}
\DeclareSizeFunction{DNPgenb}{\CJK@DNPgen}
\DeclareSizeFunction{DNP}{\CJK@DNP}
\DeclareSizeFunction{DNPb}{\CJK@DNP}
%
\@ifpackageloaded{CJK}{}{%
  \AtBeginDocument{%
    \@ifpackageloaded{CJK}{%
      \PackageError{fontenc C??}{Load fontencoding C00/C40/... after CJK}{%
        Otherwise strange things may happen, when you use those encodings}}{}}}
\def\CJKresetplane{\let\CJK@plane\undefined}
%%% Local Variables:
%%% mode: latex
%%% coding: utf-8
%%% TeX-master: "../test.tex"
%%% End:
%%% Local IspellDict: british
%
⟨/cenccmn.tex⟩
```

## 4.3 File c00enc.def

```
⟨*c00enc.def⟩
```

```
\ProvidesFile{c00enc.def}[2001/10/11 Fontencoding C00 (Big5)]%
\DeclareFontEncoding{C00}{}{}%
\DeclareFontSubstitution{C00}{song}{m}{n}%
\input{cenccmn.tex}%
\expandafter\let\csname C00/song/m/n\endcsname\undefined
%
⟨/c00enc.def⟩
```

## 4.4 File c10enc.def

```
⟨*c10enc.def⟩
\ProvidesFile{c10enc.def}[2001/10/11 Fontencoding C10 (Big5)]%
\DeclareFontEncoding{C10}{}{}%
\DeclareFontSubstitution{C10}{song}{m}{n}%
\input{cenccmn.tex}%
\expandafter\let\csname C10/song/m/n\endcsname\undefined
%
⟨/c10enc.def⟩
```

## 4.5 File c40enc.def

```
⟨*c40enc.def⟩
\ProvidesFile{c40enc.def}[2002/11/25 Fontencoding C40 (JIS)]%
\DeclareFontEncoding{C40}{}{}%
\DeclareFontSubstitution{C40}{song}{m}{n}%
\input{cenccmn.tex}%
\expandafter\let\csname C40/song/m/n\endcsname\undefined
\def\cjk@Cforty#1#2#3#4{% Takes JIS0208 codepos in hex
  {%
    \count0="#1#2
    \multiply\count0 by94
    \advance\count0 by"#3#4
    \advance\count0 by-"B3F
    \count1\count0
    \divide\count0 by256
    \multiply\count0 by256
    \advance\count1 by-\count0
    \divide\count0 by256
    %\typeout{C0=\number\count0, C1=\number\count1}%
    \edef\temp@a{\ifnum\count0<10 0\fi\number\count0}%
    \edef\temp@b{\ifx\temp@a\CJK@plane\else
      \def\noexpand\CJK@plane{\temp@a}\noexpand\selectfont\fi
      \char\number\count\@ne\space}%
    %\typeout{C40: \meaning\temp@b}%
    \expandafter}\temp@b%
  }%
\DeclareTextCommand\jischar{C40}[1]{\cjk@Cforty#1}
\DeclareTextCommandDefault\jischar[1]{{\fontencoding{C40}%
    \let\CJK@plane\undefined\cjk@Cforty#1}}
%
%
⟨/c40enc.def⟩
```

## 4.6 File c42enc.def

```
⟨*c42enc.def⟩
\ProvidesFile{c42enc.def}[2002/11/25 Fontencoding C42 (JISdnp)]%
\DeclareFontEncoding{C42}{}{}%
\DeclareFontSubstitution{C42}{song}{m}{n}%
\input{cenccmn.tex}%
\expandafter\let\csname C42/song/m/n\endcsname\undefined
\def\cjk@Cfrttw@#1#2#3{%
  \advance\count1 by#3
  \ifnum\count1>256\advance\count1by-256\def\temp@a{#2}\else\def\temp@a{#1}\fi
  %\typeout{#1/#2/#3, \meaning\temp@a, \number\count1}%
}
\def\cjk@Cfrttw#1#2#3#4{% Takes JIS0208 codepos in hex
  %\typeout{JIS: #1#2#3#4}%
  {%
    \count0="#1#2 \count1="#3#4
    \advance\count0by-33
    \expandafter\cjk@Cfrttw@
    \ifcase\count0
    {sy}{err}{-32}\or % 0
    {sy}{err}{68}\or % 1
    {roma}{err}{0}\or % 2
    {hira}{err}{-32}\or % 3
    {kata}{err}{-32}\or % 4
    {greek}{err}{-32}\or % 5
    {russian}{err}{-32}\or % 6
    {keisen}{err}{-32}\or % 7
    {err}{err}{128}\or % 8
    {err}{err}{128}\or % 9
    {err}{err}{128}\or % 10
    {err}{err}{128}\or % 11
    {err}{err}{128}\or % 12
    {err}{err}{128}\or % 13
    {err}{err}{128}\or % 14
    {ka}{err}{-33}\or % 15
    {ka}{err}{61}\or % 16
    {ka}{kb}{155}\or % 17
    {kb}{err}{-7}\or % 18
    {kb}{err}{87}\or % 19
    {kb}{kc}{181}\or % 20
    {kc}{err}{19}\or % 21
    {kc}{err}{113}\or % 22
    {kc}{kd}{207}\or % 23
    {kd}{err}{45}\or % 24
    {kd}{ke}{139}\or % 25
    {ke}{err}{-23}\or % 26
    {ke}{err}{71}\or % 27
    {ke}{kf}{165}\or % 28
    {kf}{err}{3}\or % 29
    {kf}{err}{97}\or % 30
    {kf}{kg}{191}\or % 31
    {kg}{err}{29}\or % 32
    {kg}{err}{123}\or % 33
    {kg}{kh}{217}\or % 34
    {kh}{err}{55}\or % 35
```

```
    {kh}{ki}{149}\or % 36
    {ki}{err}{-13}\or % 37
    {ki}{err}{81}\or % 38
    {ki}{kj}{175}\or % 39
    {kj}{err}{13}\or % 40
    {kj}{err}{107}\or % 41
    {kj}{kk}{201}\or % 42
    {kk}{err}{39}\or % 43
    {kk}{kl}{133}\or % 44
    {kl}{err}{-29}\or % 45
    {kl}{err}{65}\or % 46
    {km}{err}{-33}\or % 47
    {km}{err}{61}\or % 48
    {km}{kn}{155}\or % 49
    {kn}{err}{-7}\or % 50
    {kn}{err}{87}\or % 51
    {kn}{ko}{181}\or % 52
    {ko}{err}{19}\or % 53
    {ko}{err}{113}\or % 54
    {ko}{kp}{207}\or % 55
    {kp}{err}{45}\or % 56
    {kp}{kq}{139}\or % 57
    {kq}{err}{-23}\or % 58
    {kq}{err}{71}\or % 59
    {kq}{kr}{165}\or % 60
    {kr}{err}{3}\or % 61
    {kr}{err}{97}\or % 62
    {kr}{ks}{191}\or % 63
    {ks}{err}{29}\or % 64
    {ks}{err}{123}\or % 65
    {ks}{kt}{217}\or % 66
    {kt}{err}{55}\or % 67
    {kt}{ku}{149}\or % 68
    {ku}{err}{-13}\or % 69
    {ku}{err}{81}\or % 70
    {ku}{kv}{175}\or % 71
    {kv}{err}{13}\or % 72
    {kv}{err}{107}\or % 73
    {kv}{kw}{201}\or % 74
    {kw}{err}{39}\or % 75
    {kw}{kx}{133}\or % 76
    {kx}{err}{-29}\or % 77
    {kx}{err}{65}\or % 78
    {kx}{ky}{159}\or % 79
    {ky}{err}{-3}\or % 80
    {ky}{err}{91}\or % 81
    {ky}{kz}{185}\or % 82
    {kz}{err}{23}\else % 83
    {err}{err}0\fi
    \edef\temp@b{\ifx\temp@a\CJK@plane\else
      \def\noexpand\CJK@plane{\temp@a}\noexpand\selectfont\fi
      \char\number\count\@ne\space}%
    %\typeout{C42: \meaning\temp@b}%
    \expandafter}\temp@b%
```

```
  }%
\DeclareTextCommand\jischar{C42}[1]{\cjk@Cfrttw#1}
\DeclareTextCommandDefault\jischar[1]{{\fontencoding{C42}%
    \let\CJK@plane\undefined\cjk@Cfrttw#1}}
%
%
⟨/c42enc.def⟩
```

## 4.7 File c61enc.def

```
⟨*c61enc.def⟩
\ProvidesFile{c61enc.def}[2001/10/11 Fontencoding C61 (KSC5601 hangul)]%
\DeclareFontEncoding{C61}{}{}%
\DeclareFontSubstitution{C61}{mj}{m}{n}%
\input{cenccmn.tex}%
\expandafter\let\csname C61/mj/m/n\endcsname\undefined
%
⟨/c61enc.def⟩
```

## 4.8 File lklenc.def

```
⟨*lklenc.def⟩
\ProvidesFile{lklenc.def}[2001/10/17 Okuda (Klingon) Font Encoding LKL]
\DeclareFontEncoding{LKL}{}{}
\DeclareFontSubstitution{LKL}{kli}{m}{n}
\DeclareTextSymbol{\klingona}{LKL}{‘\a}
\DeclareTextSymbol{\klingonb}{LKL}{‘\b}
\DeclareTextSymbol{\klingonch}{LKL}{‘\C}
\DeclareTextSymbol{\klingonD}{LKL}{‘\D}
\DeclareTextSymbol{\klingone}{LKL}{‘\e}
\DeclareTextSymbol{\klingongh}{LKL}{‘\G}
\DeclareTextSymbol{\klingonH}{LKL}{‘\H}
\DeclareTextSymbol{\klingonI}{LKL}{‘\I}
\DeclareTextSymbol{\klingonj}{LKL}{‘\j}
\DeclareTextSymbol{\klingonl}{LKL}{‘\l}
\DeclareTextSymbol{\klingonm}{LKL}{‘\m}
\DeclareTextSymbol{\klingonn}{LKL}{‘\n}
\DeclareTextSymbol{\klingonng}{LKL}{‘\N}
\DeclareTextSymbol{\klingono}{LKL}{‘\o}
\DeclareTextSymbol{\klingonp}{LKL}{‘\p}
\DeclareTextSymbol{\klingonq}{LKL}{‘\q}
\DeclareTextSymbol{\klingonQ}{LKL}{‘\Q}
\DeclareTextSymbol{\klingonr}{LKL}{‘\r}
\DeclareTextSymbol{\klingonS}{LKL}{‘\S}
\DeclareTextSymbol{\klingont}{LKL}{‘\t}
\DeclareTextSymbol{\klingontlh}{LKL}{‘\T}
\DeclareTextSymbol{\klingonu}{LKL}{‘\u}
\DeclareTextSymbol{\klingonv}{LKL}{‘\v}
\DeclareTextSymbol{\klingonw}{LKL}{‘\w}
\DeclareTextSymbol{\klingony}{LKL}{‘\y}
\DeclareTextSymbol{\klingonglotstop}{LKL}{‘\’}
\DeclareTextSymbol{\klingonzero}{LKL}{‘\0}
\DeclareTextSymbol{\klingonone}{LKL}{‘\1}
\DeclareTextSymbol{\klingontwo}{LKL}{‘\2}
\DeclareTextSymbol{\klingonthree}{LKL}{‘\3}
```

```
\DeclareTextSymbol{\klingonfour}{LKL}{‘\4}
\DeclareTextSymbol{\klingonfive}{LKL}{‘\5}
\DeclareTextSymbol{\klingonsix}{LKL}{‘\6}
\DeclareTextSymbol{\klingonseven}{LKL}{‘\7}
\DeclareTextSymbol{\klingoneight}{LKL}{‘\8}
\DeclareTextSymbol{\klingonnine}{LKL}{‘\9}
%
```
⟨/lklenc.def⟩

## 4.9 File `lklkli.fd`

⟨*lklkli.fd⟩

I have named this fontfamily kli, since it uses the font found on the KLI homepage (http://www.kli.org)

```
\ProvidesFile{lklkli.fd}[2001/10/11 Fontfamily kli for Fontencoding LKL]%
\DeclareFontFamily{LKL}{kli}{}%
\DeclareFontShape{LKL}{kli}{m}{n}{<-> pIq}{}%
```

Since there is no case distinction, small caps is identical to normal.

```
\DeclareFontShape{LKL}{kli}{m}{sc}{<-> pIq}{}%
%
```
⟨/lklkli.fd⟩

## 4.10 File `ldvenc.def`

⟨*ldvenc.def⟩

```
\NeedsTeXFormat{LaTeX2e}[1998/12/01]
\ProvidesFile{ldvenc.def}[2004/10/17 Autogenerated encoding LDV]
\DeclareFontEncoding{LDV}{}{}
\DeclareFontSubstitution{LDV}{arial}{m}{n}
\DeclareTextSymbol{\guillemotleft}{LDV}{19}
\DeclareTextSymbol{\guillemotright}{LDV}{20}
\DeclareTextSymbol{\guilsinglleft}{LDV}{14}
\DeclareTextSymbol{\guilsinglright}{LDV}{15}
\DeclareTextSymbol{\i}{LDV}{25}
\DeclareTextSymbol{\quotedblbase}{LDV}{18}
\DeclareTextSymbol{\quotesinglbase}{LDV}{13}
\DeclareTextSymbol{\textasciicircum}{LDV}{‘\^}
\DeclareTextSymbol{\textasciitilde}{LDV}{‘\~}
\DeclareTextSymbol{\textbackslash}{LDV}{‘\\}
\DeclareTextSymbol{\textbar}{LDV}{‘\|}
\DeclareTextSymbol{\textbraceleft}{LDV}{‘\{}
\DeclareTextSymbol{\textbraceright}{LDV}{‘\}}
\DeclareTextSymbol{\textdollar}{LDV}{‘\$}
\DeclareTextSymbol{\textemdash}{LDV}{22}
\DeclareTextSymbol{\textendash}{LDV}{21}
\DeclareTextSymbol{\textgreater}{LDV}{‘\>}
\DeclareTextSymbol{\textless}{LDV}{‘\<}
\DeclareTextSymbol{\textquotedblleft}{LDV}{16}
\DeclareTextSymbol{\textquotedblright}{LDV}{17}
\DeclareTextSymbol{\textquotedbl}{LDV}{‘\"}
\DeclareTextSymbol{\textquoteleft}{LDV}{‘\‘}
\DeclareTextSymbol{\textquoteright}{LDV}{‘\’}
```

```
\DeclareTextSymbol{\textunderscore}{LDV}{95}
\DeclareTextCommand{\textdevanagaricandrabindu}{LDV}[1]{#1\char129 }
\DeclareTextCommand{\textdevanagarianusvara}{LDV}[1]{#1\char130 }
\DeclareTextCommand{\textdevanagarivisarga}{LDV}[1]{#1\char131 }
\DeclareTextSymbol{\textdevanagaria}{LDV}{133}
\DeclareTextSymbol{\textdevanagariaa}{LDV}{134}
\DeclareTextSymbol{\textdevanagarii}{LDV}{135}
\DeclareTextSymbol{\textdevanagariii}{LDV}{136}
\DeclareTextSymbol{\textdevanagariu}{LDV}{137}
\DeclareTextSymbol{\textdevanagariuu}{LDV}{138}
\DeclareTextSymbol{\textdevanagarivocalicr}{LDV}{139}
\DeclareTextSymbol{\textdevanagarivocalicl}{LDV}{140}
\DeclareTextSymbol{\textdevanagaricandrae}{LDV}{141}
\DeclareTextSymbol{\textdevanagarishorte}{LDV}{142}
\DeclareTextSymbol{\textdevanagarie}{LDV}{143}
\DeclareTextSymbol{\textdevanagariai}{LDV}{144}
\DeclareTextSymbol{\textdevanagaricandrao}{LDV}{145}
\DeclareTextSymbol{\textdevanagarishorto}{LDV}{146}
\DeclareTextSymbol{\textdevanagario}{LDV}{147}
\DeclareTextSymbol{\textdevanagariau}{LDV}{148}
\DeclareTextSymbol{\textdevanagarika}{LDV}{149}
\DeclareTextSymbol{\textdevanagarikha}{LDV}{150}
\DeclareTextSymbol{\textdevanagariga}{LDV}{151}
\DeclareTextSymbol{\textdevanagarigha}{LDV}{152}
\DeclareTextSymbol{\textdevanagaringa}{LDV}{153}
\DeclareTextSymbol{\textdevanagarica}{LDV}{154}
\DeclareTextSymbol{\textdevanagaricha}{LDV}{155}
\DeclareTextSymbol{\textdevanagarija}{LDV}{156}
\DeclareTextSymbol{\textdevanagarijha}{LDV}{157}
\DeclareTextSymbol{\textdevanagarinya}{LDV}{158}
\DeclareTextSymbol{\textdevanagaritta}{LDV}{159}
\DeclareTextSymbol{\textdevanagarittha}{LDV}{160}
\DeclareTextSymbol{\textdevanagaridda}{LDV}{161}
\DeclareTextSymbol{\textdevanagariddha}{LDV}{162}
\DeclareTextSymbol{\textdevanagarinna}{LDV}{163}
\DeclareTextSymbol{\textdevanagarita}{LDV}{164}
\DeclareTextSymbol{\textdevanagaritha}{LDV}{165}
\DeclareTextSymbol{\textdevanagarida}{LDV}{166}
\DeclareTextSymbol{\textdevanagaridha}{LDV}{167}
\DeclareTextSymbol{\textdevanagarina}{LDV}{168}
\DeclareTextSymbol{\textdevanagarinnna}{LDV}{169}
\DeclareTextSymbol{\textdevanagaripa}{LDV}{170}
\DeclareTextSymbol{\textdevanagaripha}{LDV}{171}
\DeclareTextSymbol{\textdevanagariba}{LDV}{172}
\DeclareTextSymbol{\textdevanagaribha}{LDV}{173}
\DeclareTextSymbol{\textdevanagarima}{LDV}{174}
\DeclareTextSymbol{\textdevanagariya}{LDV}{175}
\DeclareTextSymbol{\textdevanagarira}{LDV}{176}
\DeclareTextSymbol{\textdevanagarirra}{LDV}{177}
\DeclareTextSymbol{\textdevanagarila}{LDV}{178}
\DeclareTextSymbol{\textdevanagarilla}{LDV}{179}
\DeclareTextSymbol{\textdevanagarillla}{LDV}{180}
\DeclareTextSymbol{\textdevanagariva}{LDV}{181}
\DeclareTextSymbol{\textdevanagarisha}{LDV}{182}
```

```
\DeclareTextSymbol{\textdevanagarissa}{LDV}{183}
\DeclareTextSymbol{\textdevanagarisa}{LDV}{184}
\DeclareTextSymbol{\textdevanagariha}{LDV}{185}
\DeclareTextCommand{\textdevanagarinukta}{LDV}[1]{#1\char188 }
\DeclareTextSymbol{\textdevanagariavagraha}{LDV}{189}
\DeclareTextCommand{\textdevanagarivowelaa}{LDV}[1]{#1\char190 }
\DeclareTextCommand{\textdevanagarivoweli}{LDV}[1]{\char191 #1}
\DeclareTextCommand{\textdevanagarivowelii}{LDV}[1]{#1\char192 }
\DeclareTextCommand{\textdevanagarivowelu}{LDV}[1]{#1\char193 }
\DeclareTextCommand{\textdevanagarivoweluu}{LDV}[1]{#1\char194 }
\DeclareTextCommand{\textdevanagarivowelvocalicr}{LDV}[1]{#1\char195 }
\DeclareTextCommand{\textdevanagarivowelvocalicrr}{LDV}[1]{#1\char196 }
\DeclareTextCommand{\textdevanagarivowelcandrae}{LDV}[1]{#1\char197 }
\DeclareTextCommand{\textdevanagarivowelshorte}{LDV}[1]{#1\char198 }
\DeclareTextCommand{\textdevanagarivowele}{LDV}[1]{#1\char199 }
\DeclareTextCommand{\textdevanagarivowelai}{LDV}[1]{#1\char200 }
\DeclareTextCommand{\textdevanagarivowelcandrao}{LDV}[1]{#1\char201 }
\DeclareTextCommand{\textdevanagarivowelshorto}{LDV}[1]{#1\char202 }
\DeclareTextCommand{\textdevanagarivowelo}{LDV}[1]{#1\char203 }
\DeclareTextCommand{\textdevanagarivowelau}{LDV}[1]{#1\char204 }
\DeclareTextCommand{\textdevanagarivirama}{LDV}[1]{#1\char205 }
\DeclareTextSymbol{\textdevanagariom}{LDV}{208}
\DeclareTextCommand{\textdevanagariudatta}{LDV}[1]{#1\char209 }
\DeclareTextCommand{\textdevanagarianudatta}{LDV}[1]{#1\char210 }
\DeclareTextCommand{\‘}{LDV}[1]{#1\char211 }
\DeclareTextCommand{\’}{LDV}[1]{#1\char212 }
\DeclareTextSymbol{\textdevanagariqa}{LDV}{216}
\DeclareTextSymbol{\textdevanagarikhha}{LDV}{217}
\DeclareTextSymbol{\textdevanagarighha}{LDV}{218}
\DeclareTextSymbol{\textdevanagariza}{LDV}{219}
\DeclareTextSymbol{\textdevanagaridddha}{LDV}{220}
\DeclareTextSymbol{\textdevanagarirha}{LDV}{221}
\DeclareTextSymbol{\textdevanagarifa}{LDV}{222}
\DeclareTextSymbol{\textdevanagariyya}{LDV}{223}
\DeclareTextSymbol{\textdevanagarivocalicrr}{LDV}{224}
\DeclareTextSymbol{\textdevanagarivocalicll}{LDV}{225}
\DeclareTextCommand{\textdevanagarivowelvocalicl}{LDV}[1]{#1\char226 }
\DeclareTextCommand{\textdevanagarivowelvocalicll}{LDV}[1]{#1\char227 }
\DeclareTextSymbol{\textdevanagaridanda}{LDV}{228}
\DeclareTextSymbol{\textdevanagaridoubledanda}{LDV}{229}
\DeclareTextSymbol{\textdevanagarizero}{LDV}{230}
\DeclareTextSymbol{\textdevanagarione}{LDV}{231}
\DeclareTextSymbol{\textdevanagaritwo}{LDV}{232}
\DeclareTextSymbol{\textdevanagarithree}{LDV}{233}
\DeclareTextSymbol{\textdevanagarifour}{LDV}{234}
\DeclareTextSymbol{\textdevanagarifive}{LDV}{235}
\DeclareTextSymbol{\textdevanagarisix}{LDV}{236}
\DeclareTextSymbol{\textdevanagariseven}{LDV}{237}
\DeclareTextSymbol{\textdevanagarieight}{LDV}{238}
\DeclareTextSymbol{\textdevanagarinine}{LDV}{239}
\DeclareTextSymbol{\textdevanagariabbreviation}{LDV}{240}
%
⟨/ldvenc.def⟩
```

## 4.11 File ldvarial.fd

```
⟨*ldvarial.fd⟩
\ProvidesFile{ldvarial.fd}[2004/10/17 Autogenerated .fd file for encoding LDV, family arial]
\DeclareFontFamily{LDV}{arial}{}
\DeclareFontShape{LDV}{arial}{m}{n}{<-> * arialuni090t}{}
%
⟨/ldvarial.fd⟩
```

## 4.12 File ldvc2000.fd

```
⟨*ldvc2000.fd⟩
\ProvidesFile{ldvc2000.fd}[2004/10/17 Autogenerated .fd file for encoding LDV, family c2000]
\DeclareFontFamily{LDV}{c2000}{}
\DeclareFontShape{LDV}{c2000}{m}{n}{<-> * code2k090t}{}
%
⟨/ldvc2000.fd⟩
```

## 4.13 File letenc.def

```
⟨*letenc.def⟩
\NeedsTeXFormat{LaTeX2e}[1998/12/01]
\ProvidesFile{letenc.def}[2004/10/17 Autogenerated encodings LET, Let]
\DeclareFontEncoding{LET}{}{}
\DeclareFontSubstitution{LET}{gfzem}{m}{n}
\DeclareFontEncoding{Let}{}{}
\DeclareFontSubstitution{Let}{gfzem}{m}{n}
\DeclareTextCommand{\textascii}{LET}[1]{\@textascii@switch{#1}}
\DeclareTextCommand{\textascii}{Let}[1]{\@textascii@switch{#1}}
\DeclareTextSymbol{\textethiopicha}{LET}{0}
\DeclareTextCommand{\textethiopicha}{Let}{\fontencoding{LET}\selectfont\textethiopicha}
\DeclareTextSymbol{\textethiopichu}{LET}{1}
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\DeclareTextCommand{\textethiopicthree}{LET}{\fontencoding{Let}\selectfont\textethiopicthree
\DeclareTextSymbol{\textethiopicfour}{Let}{108}
\DeclareTextCommand{\textethiopicfour}{LET}{\fontencoding{Let}\selectfont\textethiopicfour}
\DeclareTextSymbol{\textethiopicfive}{Let}{109}
\DeclareTextCommand{\textethiopicfive}{LET}{\fontencoding{Let}\selectfont\textethiopicfive}
\DeclareTextSymbol{\textethiopicsix}{Let}{110}
\DeclareTextCommand{\textethiopicsix}{LET}{\fontencoding{Let}\selectfont\textethiopicsix}
\DeclareTextSymbol{\textethiopicseven}{Let}{111}
\DeclareTextCommand{\textethiopicseven}{LET}{\fontencoding{Let}\selectfont\textethiopicseven
\DeclareTextSymbol{\textethiopiceight}{Let}{112}
\DeclareTextCommand{\textethiopiceight}{LET}{\fontencoding{Let}\selectfont\textethiopiceight
\DeclareTextSymbol{\textethiopicnine}{Let}{113}
\DeclareTextCommand{\textethiopicnine}{LET}{\fontencoding{Let}\selectfont\textethiopicnine}
\DeclareTextSymbol{\textethiopicten}{Let}{114}
\DeclareTextCommand{\textethiopicten}{LET}{\fontencoding{Let}\selectfont\textethiopicten}
\DeclareTextSymbol{\textethiopictwenty}{Let}{115}
\DeclareTextCommand{\textethiopictwenty}{LET}{\fontencoding{Let}\selectfont\textethiopictwen
\DeclareTextSymbol{\textethiopicthirty}{Let}{116}
\DeclareTextCommand{\textethiopicthirty}{LET}{\fontencoding{Let}\selectfont\textethiopicthir
```

```
\DeclareTextSymbol{\textethiopicforty}{Let}{117}
\DeclareTextCommand{\textethiopicforty}{LET}{\fontencoding{Let}\selectfont\textethiopicforty
\DeclareTextSymbol{\textethiopicfifty}{Let}{118}
\DeclareTextCommand{\textethiopicfifty}{LET}{\fontencoding{Let}\selectfont\textethiopicfifty
\DeclareTextSymbol{\textethiopicsixty}{Let}{119}
\DeclareTextCommand{\textethiopicsixty}{LET}{\fontencoding{Let}\selectfont\textethiopicsixty
\DeclareTextSymbol{\textethiopicseventy}{Let}{120}
\DeclareTextCommand{\textethiopicseventy}{LET}{\fontencoding{Let}\selectfont\textethiopicsev
\DeclareTextSymbol{\textethiopiceighty}{Let}{121}
\DeclareTextCommand{\textethiopiceighty}{LET}{\fontencoding{Let}\selectfont\textethiopiceigh
\DeclareTextSymbol{\textethiopicninety}{Let}{122}
\DeclareTextCommand{\textethiopicninety}{LET}{\fontencoding{Let}\selectfont\textethiopicnine
\DeclareTextSymbol{\textethiopichundred}{Let}{123}
\DeclareTextCommand{\textethiopichundred}{LET}{\fontencoding{Let}\selectfont\textethiopichun
\DeclareTextSymbol{\textethiopictenthousand}{Let}{124}
\DeclareTextCommand{\textethiopictenthousand}{LET}{\fontencoding{Let}\selectfont\textethiopi
%
⟨/letenc.def⟩
```

## 4.14 File letgfzem.fd

```
⟨*letgfzem.fd⟩
\ProvidesFile{letgfzem.fd}[2004/10/17 Autogenerated .fd file for encodings LET, Let, family
\DeclareFontFamily{LET}{gfzem}{}
\DeclareFontFamily{Let}{gfzem}{}
\DeclareFontShape{LET}{gfzem}{m}{n}{<-> * gfzemen12}{}
\DeclareFontShape{Let}{gfzem}{m}{n}{<-> * gfzemen13}{}
%
⟨/letgfzem.fd⟩
```

## 4.15 File letjiret.fd

```
⟨*letjiret.fd⟩
\ProvidesFile{letjiret.fd}[2004/10/17 Autogenerated .fd file for encodings LET, Let, family
\DeclareFontFamily{LET}{jiret}{}
\DeclareFontFamily{Let}{jiret}{}
\DeclareFontShape{LET}{jiret}{m}{n}{<-> * jiret12}{}
\DeclareFontShape{Let}{jiret}{m}{n}{<-> * jiret13}{}
%
⟨/letjiret.fd⟩
```

## 4.16 File letc2000.fd

```
⟨*letc2000.fd⟩
\ProvidesFile{letc2000.fd}[2004/10/17 Autogenerated .fd file for encodings LET, Let, family
\DeclareFontFamily{LET}{c2000}{}
\DeclareFontFamily{Let}{c2000}{}
\DeclareFontShape{LET}{c2000}{m}{n}{<-> * code2k12}{}
\DeclareFontShape{Let}{c2000}{m}{n}{<-> * code2k13}{}
%
⟨/letc2000.fd⟩
```

## 4.17 File ltaenc.def

```
⟨*ltaenc.def⟩
```

```
\NeedsTeXFormat{LaTeX2e}[1998/12/01]
\ProvidesFile{ltaenc.def}[2004/10/17 Autogenerated encoding LTA]
\DeclareFontEncoding{LTA}{}{}
\DeclareFontSubstitution{LTA}{arial}{m}{n}
\DeclareTextSymbol{\guillemotleft}{LTA}{19}
\DeclareTextSymbol{\guillemotright}{LTA}{20}
\DeclareTextSymbol{\guilsinglleft}{LTA}{14}
\DeclareTextSymbol{\guilsinglright}{LTA}{15}
\DeclareTextSymbol{\i}{LTA}{25}
\DeclareTextSymbol{\quotedblbase}{LTA}{18}
\DeclareTextSymbol{\quotesinglbase}{LTA}{13}
\DeclareTextSymbol{\textasciicircum}{LTA}{‘\^}
\DeclareTextSymbol{\textasciitilde}{LTA}{‘\~}
\DeclareTextSymbol{\textbackslash}{LTA}{‘\\}
\DeclareTextSymbol{\textbar}{LTA}{‘\|}
\DeclareTextSymbol{\textbraceleft}{LTA}{‘\{}
\DeclareTextSymbol{\textbraceright}{LTA}{‘\}}
\DeclareTextSymbol{\textdollar}{LTA}{‘\$}
\DeclareTextSymbol{\textemdash}{LTA}{22}
\DeclareTextSymbol{\textendash}{LTA}{21}
\DeclareTextSymbol{\textgreater}{LTA}{‘\>}
\DeclareTextSymbol{\textless}{LTA}{‘\<}
\DeclareTextSymbol{\textquotedblleft}{LTA}{16}
\DeclareTextSymbol{\textquotedblright}{LTA}{17}
\DeclareTextSymbol{\textquotedbl}{LTA}{‘\"}
\DeclareTextSymbol{\textquoteleft}{LTA}{‘\‘}
\DeclareTextSymbol{\textquoteright}{LTA}{‘\’}
\DeclareTextSymbol{\textunderscore}{LTA}{95}
\DeclareTextSymbol{\thaiKoKai}{LTA}{129}
\DeclareTextSymbol{\thaiKhoKhai}{LTA}{130}
\DeclareTextSymbol{\thaiKhoKhuat}{LTA}{131}
\DeclareTextSymbol{\thaiKhoKhwai}{LTA}{132}
\DeclareTextSymbol{\thaiKhoKhon}{LTA}{133}
\DeclareTextSymbol{\thaiKhoRakhang}{LTA}{134}
\DeclareTextSymbol{\thaiNgoNgu}{LTA}{135}
\DeclareTextSymbol{\thaiChoChan}{LTA}{136}
\DeclareTextSymbol{\thaiChoChing}{LTA}{137}
\DeclareTextSymbol{\thaiChoChang}{LTA}{138}
\DeclareTextSymbol{\thaiSoSo}{LTA}{139}
\DeclareTextSymbol{\thaiChoChoe}{LTA}{140}
\DeclareTextSymbol{\thaiYoYing}{LTA}{141}
\DeclareTextSymbol{\thaiDoChada}{LTA}{142}
\DeclareTextSymbol{\thaiToPatak}{LTA}{143}
\DeclareTextSymbol{\thaiThoThan}{LTA}{144}
\DeclareTextSymbol{\thaiThoNangmontho}{LTA}{145}
\DeclareTextSymbol{\thaiThoPhuthao}{LTA}{146}
\DeclareTextSymbol{\thaiNoNen}{LTA}{147}
\DeclareTextSymbol{\thaiDoDek}{LTA}{148}
\DeclareTextSymbol{\thaiToTao}{LTA}{149}
\DeclareTextSymbol{\thaiThoThung}{LTA}{150}
\DeclareTextSymbol{\thaiThoThahan}{LTA}{151}
\DeclareTextSymbol{\thaiThoThong}{LTA}{152}
\DeclareTextSymbol{\thaiNoNu}{LTA}{153}
\DeclareTextSymbol{\thaiBoBaimai}{LTA}{154}
```

```
\DeclareTextSymbol{\thaiPoPla}{LTA}{155}
\DeclareTextSymbol{\thaiPhoPhung}{LTA}{156}
\DeclareTextSymbol{\thaiFoFa}{LTA}{157}
\DeclareTextSymbol{\thaiPhoPhan}{LTA}{158}
\DeclareTextSymbol{\thaiFoFan}{LTA}{159}
\DeclareTextSymbol{\thaiPhoSamphao}{LTA}{160}
\DeclareTextSymbol{\thaiMoMa}{LTA}{161}
\DeclareTextSymbol{\thaiYoYak}{LTA}{162}
\DeclareTextSymbol{\thaiRoRua}{LTA}{163}
\DeclareTextSymbol{\thaiRu}{LTA}{164}
\DeclareTextSymbol{\thaiLoLing}{LTA}{165}
\DeclareTextSymbol{\thaiLu}{LTA}{166}
\DeclareTextSymbol{\thaiWoWaen}{LTA}{167}
\DeclareTextSymbol{\thaiSoSala}{LTA}{168}
\DeclareTextSymbol{\thaiSoRusi}{LTA}{169}
\DeclareTextSymbol{\thaiSoSua}{LTA}{170}
\DeclareTextSymbol{\thaiHoHip}{LTA}{171}
\DeclareTextSymbol{\thaiLoChula}{LTA}{172}
\DeclareTextSymbol{\thaiOAng}{LTA}{173}
\DeclareTextSymbol{\thaiHoNokhuk}{LTA}{174}
\DeclareTextSymbol{\thaiPaiyannoi}{LTA}{175}
\DeclareTextSymbol{\thaiSaraA}{LTA}{176}
\DeclareTextSymbol{\thaiMaiHanakat}{LTA}{177}
\DeclareTextSymbol{\thaiSaraAa}{LTA}{178}
\DeclareTextSymbol{\thaiSaraAm}{LTA}{179}
\DeclareTextSymbol{\thaiSaraI}{LTA}{180}
\DeclareTextSymbol{\thaiSaraIi}{LTA}{181}
\DeclareTextSymbol{\thaiSaraUe}{LTA}{182}
\DeclareTextSymbol{\thaiSaraUee}{LTA}{183}
\DeclareTextSymbol{\thaiSaraU}{LTA}{184}
\DeclareTextSymbol{\thaiSaraUu}{LTA}{185}
\DeclareTextSymbol{\thaiPhinthu}{LTA}{186}
\DeclareTextSymbol{\textbaht}{LTA}{191}
\DeclareTextSymbol{\thaiSaraE}{LTA}{192}
\DeclareTextSymbol{\thaiSaraAe}{LTA}{193}
\DeclareTextSymbol{\thaiSaraO}{LTA}{194}
\DeclareTextSymbol{\thaiSaraAiMaimuan}{LTA}{195}
\DeclareTextSymbol{\thaiSaraAiMaimalai}{LTA}{196}
\DeclareTextSymbol{\thaiLakkhangyao}{LTA}{197}
\DeclareTextSymbol{\thaiMaiyamok}{LTA}{198}
\DeclareTextSymbol{\thaiMaitaikhu}{LTA}{199}
\DeclareTextSymbol{\thaiMaiEk}{LTA}{200}
\DeclareTextSymbol{\thaiMaiTho}{LTA}{201}
\DeclareTextSymbol{\thaiMaiTri}{LTA}{202}
\DeclareTextSymbol{\thaiMaiChattawa}{LTA}{203}
\DeclareTextSymbol{\thaiThanthakhat}{LTA}{204}
\DeclareTextSymbol{\thaiNikhahit}{LTA}{205}
\DeclareTextSymbol{\thaiYamakkan}{LTA}{206}
\DeclareTextSymbol{\thaiFongman}{LTA}{207}
\DeclareTextSymbol{\thaizero}{LTA}{208}
\DeclareTextSymbol{\thaione}{LTA}{209}
\DeclareTextSymbol{\thaitwo}{LTA}{210}
\DeclareTextSymbol{\thaithree}{LTA}{211}
\DeclareTextSymbol{\thaifour}{LTA}{212}
```

```
\DeclareTextSymbol{\thaifive}{LTA}{213}
\DeclareTextSymbol{\thaisix}{LTA}{214}
\DeclareTextSymbol{\thaiseven}{LTA}{215}
\DeclareTextSymbol{\thaieight}{LTA}{216}
\DeclareTextSymbol{\thainine}{LTA}{217}
\DeclareTextSymbol{\thaiAngkhankhu}{LTA}{218}
\DeclareTextSymbol{\thaiKhomut}{LTA}{219}
%
⟨/ltaenc.def⟩
```

## 4.18 File ltaarial.fd

```
⟨*ltaarial.fd⟩
\ProvidesFile{ltaarial.fd}[2004/10/17 Autogenerated .fd file for encoding LTA, family arial]
\DeclareFontFamily{LTA}{arial}{}
\DeclareFontShape{LTA}{arial}{m}{n}{<-> * arialuni0e0t}{}
%
⟨/ltaarial.fd⟩
```

## 4.19 File ltac2000.fd

```
⟨*ltac2000.fd⟩
\ProvidesFile{ltac2000.fd}[2004/10/17 Autogenerated .fd file for encoding LTA, family c2000]
\DeclareFontFamily{LTA}{c2000}{}
\DeclareFontShape{LTA}{c2000}{m}{n}{<-> * code2k0e0t}{}
%
⟨/ltac2000.fd⟩
```

## 4.20 File ltgenc.def

```
⟨*ltgenc.def⟩
\NeedsTeXFormat{LaTeX2e}[1998/12/01]
\ProvidesFile{ltgenc.def}[2004/10/17 Autogenerated encoding LTG]
\DeclareFontEncoding{LTG}{}{}
\DeclareFontSubstitution{LTG}{c2000}{m}{n}
\DeclareTextCommand{\texttelugustart}{LTG}{}
\DeclareTextCommand{\texttelugustop}{LTG}{}
\DeclareTextSymbol{\guillemotleft}{LTG}{19}
\DeclareTextSymbol{\guillemotright}{LTG}{20}
\DeclareTextSymbol{\guilsinglleft}{LTG}{14}
\DeclareTextSymbol{\guilsinglright}{LTG}{15}
\DeclareTextSymbol{\i}{LTG}{25}
\DeclareTextSymbol{\quotedblbase}{LTG}{18}
\DeclareTextSymbol{\quotesinglbase}{LTG}{13}
\DeclareTextSymbol{\textasciicircum}{LTG}{`\^}
\DeclareTextSymbol{\textasciitilde}{LTG}{`\~}
\DeclareTextSymbol{\textbackslash}{LTG}{`\\}
\DeclareTextSymbol{\textbar}{LTG}{`\|}
\DeclareTextSymbol{\textbraceleft}{LTG}{`\{}
\DeclareTextSymbol{\textbraceright}{LTG}{`\}}
\DeclareTextSymbol{\textdollar}{LTG}{`\$}
\DeclareTextSymbol{\textemdash}{LTG}{22}
\DeclareTextSymbol{\textendash}{LTG}{21}
\DeclareTextSymbol{\textgreater}{LTG}{`\>}
\DeclareTextSymbol{\textless}{LTG}{`\<}
```

```
\DeclareTextSymbol{\textquotedblleft}{LTG}{16}
\DeclareTextSymbol{\textquotedblright}{LTG}{17}
\DeclareTextSymbol{\textquotedbl}{LTG}{‘\"}
\DeclareTextSymbol{\textquoteleft}{LTG}{‘\‘}
\DeclareTextSymbol{\textquoteright}{LTG}{‘\’}
\DeclareTextSymbol{\textunderscore}{LTG}{95}
\DeclareTextCommand{\textteluguc andrabindu}{LTG}[1]{#1\char129 }
\DeclareTextCommand{\textteluguanusvara}{LTG}[1]{#1\char130 }
\DeclareTextCommand{\textteluguvisarga}{LTG}[1]{#1\char131 }
\DeclareTextSymbol{\texttelugua}{LTG}{133}
\DeclareTextSymbol{\textteluguaa}{LTG}{134}
\DeclareTextSymbol{\texttelugui}{LTG}{135}
\DeclareTextSymbol{\textteluguii}{LTG}{136}
\DeclareTextSymbol{\textteluguu}{LTG}{137}
\DeclareTextSymbol{\textteluguuu}{LTG}{138}
\DeclareTextSymbol{\textteluguvocalicr}{LTG}{139}
\DeclareTextSymbol{\textteluguvocalicl}{LTG}{140}
\DeclareTextSymbol{\texttelugue}{LTG}{142}
\DeclareTextSymbol{\textteluguee}{LTG}{143}
\DeclareTextSymbol{\textteluguai}{LTG}{144}
\DeclareTextSymbol{\textteluguo}{LTG}{146}
\DeclareTextSymbol{\textteluguoo}{LTG}{147}
\DeclareTextSymbol{\textteluguau}{LTG}{148}
\DeclareTextSymbol{\textteluguka}{LTG}{149}
\DeclareTextSymbol{\textteluguk ha}{LTG}{150}
\DeclareTextSymbol{\textteluguga}{LTG}{151}
\DeclareTextSymbol{\textteluguga ha}{LTG}{152}
\DeclareTextSymbol{\textteluguna ga}{LTG}{153}
\DeclareTextSymbol{\textteluguca}{LTG}{154}
\DeclareTextSymbol{\textteluguc ha}{LTG}{155}
\DeclareTextSymbol{\textteluguja}{LTG}{156}
\DeclareTextSymbol{\textteluguj ha}{LTG}{157}
\DeclareTextSymbol{\textteluguny a}{LTG}{158}
\DeclareTextSymbol{\textteluguta}{LTG}{159}
\DeclareTextSymbol{\textteluguttha}{LTG}{160}
\DeclareTextSymbol{\textteluguda}{LTG}{161}
\DeclareTextSymbol{\textteluguddha}{LTG}{162}
\DeclareTextSymbol{\textteluguna}{LTG}{163}
\DeclareTextSymbol{\textteluguta}{LTG}{164}
\DeclareTextSymbol{\textteluguth a}{LTG}{165}
\DeclareTextSymbol{\textteluguda}{LTG}{166}
\DeclareTextSymbol{\texttelugudh a}{LTG}{167}
\DeclareTextSymbol{\textteluguna}{LTG}{168}
\DeclareTextSymbol{\texttelugupa}{LTG}{170}
\DeclareTextSymbol{\textteluguph a}{LTG}{171}
\DeclareTextSymbol{\textteluguba}{LTG}{172}
\DeclareTextSymbol{\texttelugub ha}{LTG}{173}
\DeclareTextSymbol{\textteluguma}{LTG}{174}
\DeclareTextSymbol{\textteluguya}{LTG}{175}
\DeclareTextSymbol{\texttelugura}{LTG}{176}
\DeclareTextSymbol{\texttelugurra}{LTG}{177}
\DeclareTextSymbol{\texttelugula}{LTG}{178}
\DeclareTextSymbol{\textteluguulla}{LTG}{179}
\DeclareTextSymbol{\textteluguva}{LTG}{181}
```

```
\DeclareTextSymbol{\textteluguSha}{LTG}{182}
\DeclareTextSymbol{\textteluguSsa}{LTG}{183}
\DeclareTextSymbol{\textteluguSa}{LTG}{184}
\DeclareTextSymbol{\textteluguHa}{LTG}{185}
\DeclareTextCommand{\textteluguvowelaa}{LTG}[1]{#1\char190 }
\DeclareTextCommand{\textteluguvoweli}{LTG}[1]{#1\char191 }
\DeclareTextCommand{\textteluguvowelii}{LTG}[1]{#1\char192 }
\DeclareTextCommand{\textteluguvowelu}{LTG}[1]{#1\char193 }
\DeclareTextCommand{\textteluguvoweluu}{LTG}[1]{#1\char194 }
\DeclareTextCommand{\textteluguvowelvocalicr}{LTG}[1]{#1\char195 }
\DeclareTextCommand{\textteluguvowelvocalicrr}{LTG}[1]{#1\char196 }
\DeclareTextCommand{\textteluguvowele}{LTG}[1]{#1\char198 }
\DeclareTextCommand{\textteluguvowelee}{LTG}[1]{#1\char199 }
\DeclareTextCommand{\textteluguvowelai}{LTG}[1]{#1\char200 }
\DeclareTextCommand{\textteluguvowelo}{LTG}[1]{#1\char202 }
\DeclareTextCommand{\textteluguvoweloo}{LTG}[1]{#1\char203 }
\DeclareTextCommand{\textteluguvowelau}{LTG}[1]{#1\char204 }
\DeclareTextCommand{\textteluguvirama}{LTG}[1]{#1\char205 }
\DeclareTextCommand{\textteluguLengthmark}{LTG}[1]{#1\char213 }
\DeclareTextCommand{\textteluguAilengthmark}{LTG}[1]{#1\char214 }
\DeclareTextSymbol{\textteluguvocalicrr}{LTG}{224}
\DeclareTextSymbol{\textteluguvocalicll}{LTG}{225}
\DeclareTextSymbol{\textteluguzero}{LTG}{230}
\DeclareTextSymbol{\textteluguone}{LTG}{231}
\DeclareTextSymbol{\textteluguTwo}{LTG}{232}
\DeclareTextSymbol{\textteluguthree}{LTG}{233}
\DeclareTextSymbol{\textteluguFour}{LTG}{234}
\DeclareTextSymbol{\textteluguFive}{LTG}{235}
\DeclareTextSymbol{\textteluguSix}{LTG}{236}
\DeclareTextSymbol{\textteluguseven}{LTG}{237}
\DeclareTextSymbol{\textteligueight}{LTG}{238}
\DeclareTextSymbol{\textteluguNine}{LTG}{239}
%
```
⟨/ltgenc.def⟩

## 4.21 File ltgc2000.fd

```
⟨*ltgc2000.fd⟩
\ProvidesFile{ltgc2000.fd}[2004/10/17 Autogenerated .fd file for encoding LTG, family c2000]
\DeclareFontFamily{LTG}{c2000}{}
\DeclareFontShape{LTG}{c2000}{m}{n}{<-> * code2k0c0t}{}
\DeclareFontShape{LTG}{c2000}{m}{n}{<-> * arialuni0c0t}{}
%
⟨/ltgc2000.fd⟩
```

## 4.22 File ltlenc.def

```
⟨*ltlenc.def⟩
\DeclareFontEncoding{LTL}{}{}
\DeclareFontSubstitution{LTL}{cmr}{m}{n}
```

Load tlsyllable.tex, but disable loading of tlxlate.tex

```
\let\uc@temp@a\@@input
\def\@@input#1 {\def\@tempa{tlxlate}\def\@tempb{#1}\ifx\@tempb\@tempa\expandafter\@firstoftw
```

```
\input tlsyllable
\let\@@input\uc@temp@a
%
\let\ltl@state0
\let\ltl@tlvoa\tlvoa
\DeclareTextCommand{\textteluguстart}{LTL}{\let\ltl@state1}
\newcommand\ltl@vowel[2]{\let\ltl@tlvoa\empty#1\let\ltl@tlvoa\tlvoa\ifx\ltl@state2\let\ltl@s
\newcommand\ltl@cons[1]{\ifx\ltl@state2\let\ltl@state1\fi#1\ltl@tlvoa}
\newcommand\ltl@ivowel[1]{\ifx\ltl@state2\let\ltl@state1\tlvoX\fi#1}
\newcommand\ltl@dcons[1]{\ifx\ltl@state1\let\ltl@state2\fi#1\ifx\ltl@state0\tlvoX\fi}
\DeclareTextCommand{\textteluguстop}{LTL}{\ifx\ltl@state2\tlvoX\fi\let\ltl@state0}
%
% \newcommand\ltl@gencons[2]{%
%   \expandafter\ifx\csname tlcb#2\endcsname\relax
%     \PackageError{ltlenc.def}{\expandafter\string\csname tlcb#2\endcsname\space
%       undefined}{}\fi
%   \edef\@tempa{%
%     \noexpand\DeclareTextCommand{\expandafter\noexpand\csname
%       texttelugu#1\endcsname}{LTL}%
%       {\noexpand\ltl@cons{\expandafter\noexpand\csname tlcb#2\endcsname}}%
%     \noexpand\DeclareTextCompositeCommand{\noexpand\textteluguvirama}{LTL}%
%       {\expandafter\noexpand\csname texttelugu#1\endcsname}%
%       {\noexpand\ltl@dcons{\expandafter\noexpand\csname tlcb#2\endcsname}}}
%    \toks255\expandafter{\@tempa}\typeout{\the\toks255}%
%   \@tempa}
% \newcommand\ltl@genvow[2]{%
%   \expandafter\ifx\csname tlvo#2\endcsname\relax
%     \PackageError{ltlenc.def}{\expandafter\string\csname tlvo#2\endcsname\space
%       undefined}{}\fi
%   \edef\@tempa{%
%     \noexpand\DeclareTextCommand{\expandafter\noexpand\csname
%       textteluguvowel#1\endcsname}{LTL}[1]%
%       {\noexpand\ltl@vowel{####1}{\expandafter\noexpand\csname tlvo#2\endcsname}}%
%     \noexpand\DeclareTextCommand{\expandafter\noexpand\csname texttelugu#1\endcsname}{LTL}
%       {\noexpand\ltl@ivowel{\expandafter\noexpand\csname tlvo#2\endcsname}}}
%    \toks255\expandafter{\@tempa}\typeout{\the\toks255}%
%   \@tempa}
% \newcommand\ltl@gensymb[2]{%
%   \edef\@tempa{%
%     \noexpand\DeclareTextCommand{\expandafter\noexpand\csname texttelugu#1\endcsname}{LTL}
%       {\noexpand\ltl@ivowel{#2}}}
%   \toks255\expandafter{\@tempa}\typeout{\the\toks255}%
%   \@tempa}
%
\DeclareTextCommand{\textascii}{LTL}[1]{\@textascii@switch{#1}}
\DeclareTextCommand{\textteluguvirama}{LTL}[1]{\ltl@vowel{#1}{\tlvoX}}
%\DeclareTextCommand{\textteluguсandrabindu}{LTL}[1]{\ltl@vowel{#1}{\tluaas}}
%\DeclareTextCommand{\textteluguanusvara}{LTL}[1]{\ltl@vowel{#1}{\tluasu}}
%\DeclareTextCommand{\textteluguvisarga}{LTL}[1]{\ltl@vowel{#1}{\tluavi}}
\DeclareTextCommand{\textteluguсandrabindu}{LTL}[1]{#1\ltl@ivowel{\tluaas}}
\DeclareTextCommand{\textteluguanusvara}{LTL}[1]{#1\ltl@ivowel{\tluasu}}
\DeclareTextCommand{\textteluguvisarga}{LTL}[1]{#1\ltl@ivowel{\tluavi}}
%
\DeclareTextCommand{\texttelugudda}{LTL}{\ltl@cons{\tlcbD}}
```

```
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguddа}{\ltl@dcons{\tlcbD}}
\DeclareTextCommand{\textteluguьha}{LTL}{\ltl@cons{\tlcbbh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguьha}{\ltl@dcons{\tlcbbh}}
\DeclareTextCommand{\textteluguпga}{LTL}{\ltl@cons{\tlcbNG}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguпga}{\ltl@dcons{\tlcbNG}}
\DeclareTextCommand{\texttelugudha}{LTL}{\ltl@cons{\tlcbdh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\texttelugudha}{\ltl@dcons{\tlcbdh}}
\DeclareTextCommand{\textteluguka}{LTL}{\ltl@cons{\tlcbk}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguka}{\ltl@dcons{\tlcbk}}
\DeclareTextCommand{\texttelugussa}{LTL}{\ltl@cons{\tlcbSh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\texttelugussa}{\ltl@dcons{\tlcbSh}}
\DeclareTextCommand{\textteluguma}{LTL}{\ltl@cons{\tlcbm}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguma}{\ltl@dcons{\tlcbm}}
\DeclareTextCommand{\textteluguttа}{LTL}{\ltl@cons{\tlcbT}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguttа}{\ltl@dcons{\tlcbT}}
\DeclareTextCommand{\textteluguшha}{LTL}{\ltl@cons{\tlcbS}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguшha}{\ltl@dcons{\tlcbS}}
\DeclareTextCommand{\textteluguba}{LTL}{\ltl@cons{\tlcbb}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguba}{\ltl@dcons{\tlcbb}}
\DeclareTextCommand{\textteluguьa}{LTL}{\ltl@cons{\tlcbs}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguьa}{\ltl@dcons{\tlcbs}}
\DeclareTextCommand{\textteluguda}{LTL}{\ltl@cons{\tlcbd}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguda}{\ltl@dcons{\tlcbd}}
\DeclareTextCommand{\textteluguјha}{LTL}{\ltl@cons{\tlcbjh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguјha}{\ltl@dcons{\tlcbjh}}
\DeclareTextCommand{\textteluguha}{LTL}{\ltl@cons{\tlcbH}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguha}{\ltl@dcons{\tlcbH}}
\DeclareTextCommand{\textteluguttha}{LTL}{\ltl@cons{\tlcbTh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguttha}{\ltl@dcons{\tlcbTh}}
\DeclareTextCommand{\textteluguya}{LTL}{\ltl@cons{\tlcbY}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguya}{\ltl@dcons{\tlcbY}}
\DeclareTextCommand{\textteluguchа}{LTL}{\ltl@cons{\tlcbch}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguchа}{\ltl@dcons{\tlcbch}}
\DeclareTextCommand{\textteluguja}{LTL}{\ltl@cons{\tlcbj}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguja}{\ltl@dcons{\tlcbj}}
\DeclareTextCommand{\textteluguпya}{LTL}{\ltl@cons{\tlcbnx}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguпya}{\ltl@dcons{\tlcbnx}}
\DeclareTextCommand{\textteluguллa}{LTL}{\ltl@cons{\tlcbL}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguллa}{\ltl@dcons{\tlcbL}}
\DeclareTextCommand{\textteluguphа}{LTL}{\ltl@cons{\tlcbph}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguphа}{\ltl@dcons{\tlcbph}}
\DeclareTextCommand{\textteluguna}{LTL}{\ltl@cons{\tlcbn}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguna}{\ltl@dcons{\tlcbn}}
\DeclareTextCommand{\texttelugughа}{LTL}{\ltl@cons{\tlcbgh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\texttelugughа}{\ltl@dcons{\tlcbgh}}
\DeclareTextCommand{\textteluguddha}{LTL}{\ltl@cons{\tlcbDh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguddha}{\ltl@dcons{\tlcbDh}}
\DeclareTextCommand{\textteluguппa}{LTL}{\ltl@cons{\tlcbN}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguппa}{\ltl@dcons{\tlcbN}}
\DeclareTextCommand{\texttelugupa}{LTL}{\ltl@cons{\tlcbp}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\texttelugupa}{\ltl@dcons{\tlcbp}}
\DeclareTextCommand{\textteluguга}{LTL}{\ltl@cons{\tlcbr}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguга}{\ltl@dcons{\tlcbr}}
\DeclareTextCommand{\textteluguca}{LTL}{\ltl@cons{\tlcbc}}
```

```
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguca}{\ltl@dcons{\tlcbc}}
\DeclareTextCommand{\textteluguta}{LTL}{\ltl@cons{\tlcbth}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguta}{\ltl@dcons{\tlcbth}}
\DeclareTextCommand{\textteluguta}{LTL}{\ltl@cons{\tlcbkh}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguta}{\ltl@dcons{\tlcbkh}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbg}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbg}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbR}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbR}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbl}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbl}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbt}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbt}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbv}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbv}}
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbbb}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbbb
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbeb}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcbeb
\DeclareTextCommand{\textteluguga}{LTL}{\ltl@cons{\tlcbob}}
\DeclareTextCompositeCommand{\textteluguvirama}{LTL}{\textteluguga}{\ltl@dcons{\tlcb
% \ltl@gencons{dda}{D}
% \ltl@gencons{bha}{bh}
% \ltl@gencons{nga}{NG}
% \ltl@gencons{dha}{dh}
% \ltl@gencons{ka}{k}
% \ltl@gencons{ssa}{Sh}
% \ltl@gencons{ma}{m}
% \ltl@gencons{tta}{T}
% \ltl@gencons{sha}{S}
% \ltl@gencons{ba}{b}
% \ltl@gencons{sa}{s}
% \ltl@gencons{da}{d}
% \ltl@gencons{jha}{jh}
% \ltl@gencons{ha}{H}
% \ltl@gencons{ttha}{Th}
% \ltl@gencons{ya}{Y}
% \ltl@gencons{cha}{ch}
% \ltl@gencons{ja}{j}
% \ltl@gencons{nya}{nx}
% \ltl@gencons{lla}{L}
% \ltl@gencons{pha}{ph}
% \ltl@gencons{na}{n}
% \ltl@gencons{gha}{gh}
% \ltl@gencons{ddha}{Dh}
% \ltl@gencons{nna}{N}
% \ltl@gencons{pa}{p}
% \ltl@gencons{ra}{r}
% \ltl@gencons{ca}{c}
% \ltl@gencons{tha}{th}
% \ltl@gencons{kha}{kh}
% \ltl@gencons{ga}{g}
% \ltl@gencons{rra}{R}
% \ltl@gencons{la}{l}
```

```
% \ltl@gencons{ta}{t}
% \ltl@gencons{va}{v}
% \ltl@gencons{blackbox}{bb}
% \ltl@gencons{emptybox}{eb}
% \ltl@gencons{outlinebox}{ob}
%
\DeclareTextCommand{\textteluguvowela}{LTL}[1]{\ltl@vowel{#1}{\tlvoa}}
\DeclareTextCommand{\texttelugua}{LTL}{\ltl@ivowel{\tlvoa}}
\DeclareTextCommand{\textteluguvowelaa}{LTL}[1]{\ltl@vowel{#1}{\tlvoA}}
\DeclareTextCommand{\texttelugua}{LTL}{\ltl@ivowel{\tlvoA}}
\DeclareTextCommand{\textteluguvoweli}{LTL}[1]{\ltl@vowel{#1}{\tlvoi}}
\DeclareTextCommand{\texttelugui}{LTL}{\ltl@ivowel{\tlvoi}}
\DeclareTextCommand{\textteluguvowelii}{LTL}[1]{\ltl@vowel{#1}{\tlvoI}}
\DeclareTextCommand{\textteluguii}{LTL}{\ltl@ivowel{\tlvoI}}
\DeclareTextCommand{\textteluguvowelu}{LTL}[1]{\ltl@vowel{#1}{\tlvou}}
\DeclareTextCommand{\textteluguu}{LTL}{\ltl@ivowel{\tlvou}}
\DeclareTextCommand{\textteluguvoweluu}{LTL}[1]{\ltl@vowel{#1}{\tlvoU}}
\DeclareTextCommand{\textteluguuu}{LTL}{\ltl@ivowel{\tlvoU}}
\DeclareTextCommand{\textteluguvowelvocalicr}{LTL}[1]{\ltl@vowel{#1}{\tlvorx}}
\DeclareTextCommand{\textteluguvocalicr}{LTL}{\ltl@ivowel{\tlvorx}}
\DeclareTextCommand{\textteluguvowelvocalicl}{LTL}[1]{\ltl@vowel{#1}{\tlvolx}}
\DeclareTextCommand{\textteluguvocalicl}{LTL}{\ltl@ivowel{\tlvolx}}
\DeclareTextCommand{\textteluguvowelvocalicrr}{LTL}[1]{\ltl@vowel{#1}{\tlvoRx}}
\DeclareTextCommand{\textteluguvocalicrr}{LTL}{\ltl@ivowel{\tlvoRx}}
\DeclareTextCommand{\textteluguvowelvocalicll}{LTL}[1]{\ltl@vowel{#1}{\tlvoLx}}
\DeclareTextCommand{\textteluguvocalicll}{LTL}{\ltl@ivowel{\tlvoLx}}
\DeclareTextCommand{\textteluguvowele}{LTL}[1]{\ltl@vowel{#1}{\tlvoe}}
\DeclareTextCommand{\texttelugue}{LTL}{\ltl@ivowel{\tlvoe}}
\DeclareTextCommand{\textteluguvowelee}{LTL}[1]{\ltl@vowel{#1}{\tlvoE}}
\DeclareTextCommand{\textteluguee}{LTL}{\ltl@ivowel{\tlvoE}}
\DeclareTextCommand{\textteluguvowelai}{LTL}[1]{\ltl@vowel{#1}{\tlvoy}}
\DeclareTextCommand{\texttelugui}{LTL}{\ltl@ivowel{\tlvoy}}
\DeclareTextCommand{\textteluguvowelo}{LTL}[1]{\ltl@vowel{#1}{\tlvoo}}
\DeclareTextCommand{\texttelugu}{LTL}{\ltl@ivowel{\tlvoo}}
\DeclareTextCommand{\textteluguvoweloo}{LTL}[1]{\ltl@vowel{#1}{\tlvoO}}
\DeclareTextCommand{\texttelugu}{LTL}{\ltl@ivowel{\tlvoO}}
\DeclareTextCommand{\textteluguvowelau}{LTL}[1]{\ltl@vowel{#1}{\tlvoow}}
\DeclareTextCommand{\texttelugu}{LTL}{\ltl@ivowel{\tlvoow}}
% \ltl@genvow{a}{a}
% \ltl@genvow{aa}{A}
% \ltl@genvow{i}{i}
% \ltl@genvow{ii}{I}
% \ltl@genvow{u}{u}
% \ltl@genvow{uu}{U}
% \ltl@genvow{vocalicr}{rx}
% \ltl@genvow{vocalicl}{lx}
% \ltl@genvow{vocalicrr}{Rx}
% \ltl@genvow{vocalicll}{Lx}
% \ltl@genvow{e}{e}
% \ltl@genvow{ee}{E}
% \ltl@genvow{ai}{y}
% \ltl@genvow{o}{o}
% \ltl@genvow{oo}{O}
% \ltl@genvow{au}{ow}
```

```
%
\DeclareTextCommand{\textteluguzero}{LTL}{\ltl@ivowel{\char\dtzeroCODE}}
\DeclareTextCommand{\textteluguone}{LTL}{\ltl@ivowel{\char\dtoneCODE}}
\DeclareTextCommand{\texttelugutwo}{LTL}{\ltl@ivowel{\char\dttwoCODE}}
\DeclareTextCommand{\textteluguthree}{LTL}{\ltl@ivowel{\char\dtthreeCODE}}
\DeclareTextCommand{\texttelugufour}{LTL}{\ltl@ivowel{\char\dtfourCODE}}
\DeclareTextCommand{\textteluguseven}{LTL}{\ltl@ivowel{\char\dtsevenCODE}}
\DeclareTextCommand{\texttelugueight}{LTL}{\ltl@ivowel{\char\dteightCODE}}
\DeclareTextCommand{\texttelugunine}{LTL}{\ltl@ivowel{\char\dtnineCODE}}
% \ltl@gensymb{zero}{\char\dtzeroCODE}%
% \ltl@gensymb{one}{\char\dtoneCODE}%
% \ltl@gensymb{two}{\char\dttwoCODE}%
% \ltl@gensymb{three}{\char\dtthreeCODE}%
% \ltl@gensymb{four}{\char\dtfourCODE}%
% \ltl@gensymb{five}{\char\dtfiveCODE}%
% \ltl@gensymb{six}{\char\dtsixCODE}%
% \ltl@gensymb{seven}{\char\dtsevenCODE}%
% \ltl@gensymb{eight}{\char\dteightCODE}%
% \ltl@gensymb{nine}{\char\dtnineCODE}%
%%% Local Variables:
%%% mode: latex
%%% coding: utf-8
%%% TeX-master: "../test.tex"
%%% End:
%%% Local IspellDict: british
%
⟨/ltlenc.def⟩
```

## 4.23 File ltlcmr.fd

```
⟨*ltlcmr.fd⟩
\DeclareFontFamily{LTL}{cmr}{}%
\DeclareFontShape{LTL}{cmr}{m}{n}{%
  <10> <11> <12> <15> <18> <20> <25> <30> <35> <40> <55> <72> <100> <172>
  gen * tel
  }{}%
\DeclareFontShape{LTL}{cmr}{bx}{n}{%
  <10> tel10b
  <11> tel11b
  <12> tel12b
  <15> tel15b
  <18> tel18b
  <20> tel20b
  <25> tel25b
  }{}%
\DeclareFontShape{LTL}{cmr}{b}{n}{%
  <-> sub * cmr/m/bx }{}%
\DeclareFontShape{LTL}{cmr}{m}{sl}{%
  <10> tel10s
  <11> tel11s
  <12> tel12s
  <15> tel15s
  <18> tel18s
```

```
  <20> tel20s
  <25> tel25s
  <30> tel30s
  <35> tel35s
  <40> tel40s
  <55> tel55s
  }{}%
\DeclareFontShape{LTL}{cmr}{m}{it}{%
  <-> sub * cmr/m/sl }{}%
\DeclareFontShape{LTL}{cmr}{nx}{n}{%
  <10> tel10nx
  <11> tel11nx
  <12> tel12nx
  }{}%
\DeclareFontShape{LTL}{cmr}{ny}{n}{%
  <10> tel10ny
  <11> tel11ny
  <12> tel12ny
  }{}%
\DeclareFontShape{LTL}{cmr}{nx}{sl}{%
  <-> sub * cmr/m/sl }{}%
\DeclareFontShape{LTL}{cmr}{ny}{sl}{%
  <-> sub * cmr/m/sl }{}%
\DeclareFontShape{LTL}{cmr}{nx}{it}{%
  <-> sub * cmr/m/sl }{}%
\DeclareFontShape{LTL}{cmr}{ny}{it}{%
  <-> sub * cmr/m/sl }{}%
%
```
⟨/ltlcmr.fd⟩

## 4.24 File `ltwenc.def`

⟨*ltwenc.def⟩

This encoding is for tengwar fonts ordered according to the Unicode page `0xE0xx` as defined on `http://www.evertype.com/standards/csur/tengwar.html`.

`U+E000..U+E07F` is at positions `0x00..0x7F`. The upper half is reserved for extensions.

```
\ProvidesFile{ltwenc.def}[2001/10/17 Fontencoding LTW for Tengwar]
\DeclareFontEncoding{LTW}{}{}
\DeclareFontSubstitution{LTW}{dsque}{m}{n}
```

Tengwar (normal letters)

```
\DeclareTextSymbol{\tengwarTinco}{LTW}{"00}
\DeclareTextSymbol{\tengwarParma}{LTW}{"01}
\DeclareTextSymbol{\tengwarCalma}{LTW}{"02}
\DeclareTextSymbol{\tengwarQuesse}{LTW}{"03}
\DeclareTextSymbol{\tengwarAndo}{LTW}{"04}
\DeclareTextSymbol{\tengwarUmbar}{LTW}{"05}
\DeclareTextSymbol{\tengwarAnga}{LTW}{"06}
\DeclareTextSymbol{\tengwarUngwe}{LTW}{"07}
\DeclareTextSymbol{\tengwarThuule}{LTW}{"08}
\DeclareTextSymbol{\tengwarFormen}{LTW}{"09}
```

```
\DeclareTextSymbol{\tengwarHarma}{LTW}{"0A}
\DeclareTextSymbol{\tengwarHwesta}{LTW}{"0B}
\DeclareTextSymbol{\tengwarAnto}{LTW}{"0C}
\DeclareTextSymbol{\tengwarAmpa}{LTW}{"0D}
\DeclareTextSymbol{\tengwarAnca}{LTW}{"0E}
\DeclareTextSymbol{\tengwarUnque}{LTW}{"0F}
\DeclareTextSymbol{\tengwarNuumen}{LTW}{"10}
\DeclareTextSymbol{\tengwarMalta}{LTW}{"11}
\DeclareTextSymbol{\tengwarNoldo}{LTW}{"12}
\DeclareTextSymbol{\tengwarNwalme}{LTW}{"13}
\DeclareTextSymbol{\tengwarOore}{LTW}{"14}
\DeclareTextSymbol{\tengwarVala}{LTW}{"15}
\DeclareTextSymbol{\tengwarAnna}{LTW}{"16}
\DeclareTextSymbol{\tengwarVilya}{LTW}{"17}
\DeclareTextSymbol{\tengwarRoomen}{LTW}{"18}
\DeclareTextSymbol{\tengwarArda}{LTW}{"19}
\DeclareTextSymbol{\tengwarLambe}{LTW}{"1A}
\DeclareTextSymbol{\tengwarAlda}{LTW}{"1B}
\DeclareTextSymbol{\tengwarSilme}{LTW}{"1C}
\DeclareTextSymbol{\tengwarSilmeNuquerna}{LTW}{"1D}
\DeclareTextSymbol{\tengwarAare}{LTW}{"1E}
\DeclareTextSymbol{\tengwarAareNuquerna}{LTW}{"1F}
\DeclareTextSymbol{\tengwarHyarmen}{LTW}{"20}
\DeclareTextSymbol{\tengwarHwestaSindarinwa}{LTW}{"21}
\DeclareTextSymbol{\tengwarYanta}{LTW}{"22}
\DeclareTextSymbol{\tengwarUure}{LTW}{"23}
\DeclareTextSymbol{\tengwarHalla}{LTW}{"24}
\DeclareTextSymbol{\tengwarShortCarrier}{LTW}{"25}
\DeclareTextSymbol{\tengwarLongCarrier}{LTW}{"26}
\DeclareTextSymbol{\tengwarAnnaSindarinwa}{LTW}{"27}
\DeclareTextSymbol{\tengwarExtThuule}{LTW}{"28}
\DeclareTextSymbol{\tengwarExtFormen}{LTW}{"29}
\DeclareTextSymbol{\tengwarExtHarma}{LTW}{"2A}
\DeclareTextSymbol{\tengwarExtHwesta}{LTW}{"2B}
\DeclareTextSymbol{\tengwarExtAnto}{LTW}{"2C}
\DeclareTextSymbol{\tengwarExtAmpa}{LTW}{"2D}
\DeclareTextSymbol{\tengwarExtAnca}{LTW}{"2E}
\DeclareTextSymbol{\tengwarExtUnque}{LTW}{"2F}
\DeclareTextSymbol{\tengwarStemlessOore}{LTW}{"30}
\DeclareTextSymbol{\tengwarStemlessVala}{LTW}{"31}
\DeclareTextSymbol{\tengwarStemlessAnna}{LTW}{"32}
\DeclareTextSymbol{\tengwarStemlessVilya}{LTW}{"33}
```

### Punctuation

```
\DeclareTextSymbol{\tengwarPusta}{LTW}{"50}
\DeclareTextSymbol{\tengwarDoublePusta}{LTW}{"51}
\DeclareTextSymbol{\tengwarExclam}{LTW}{"52}
\DeclareTextSymbol{\tengwarQuestion}{LTW}{"53}
\DeclareTextSymbol{\tengwarSection}{LTW}{"54}
\DeclareTextSymbol{\tengwarLongSection}{LTW}{"55}
```

### Digits

```
\ProvideTextCommandDefault{\tengwarZero}{\tengwarStemlessOore}
\ProvideTextCommandDefault{\tengwarOne}{\tengwarStemlessVilya}
```

```
\DeclareTextSymbol{\tengwarTwo}{LTW}{"62}
\DeclareTextSymbol{\tengwarThree}{LTW}{"63}
\DeclareTextSymbol{\tengwarFour}{LTW}{"64}
\DeclareTextSymbol{\tengwarFive}{LTW}{"65}
\DeclareTextSymbol{\tengwarSix}{LTW}{"66}
\DeclareTextSymbol{\tengwarSeven}{LTW}{"67}
\DeclareTextSymbol{\tengwarEight}{LTW}{"68}
\DeclareTextSymbol{\tengwarNine}{LTW}{"69}
\DeclareTextSymbol{\tengwarTen}{LTW}{"6A}
\DeclareTextSymbol{\tengwarEleven}{LTW}{"6B}
```

Tehta (accents)

```
\DeclareTextCommand{\tengwarThreeDotsAbove}{LTW}[1]{#1\char"40 }
\DeclareTextCommand{\tengwarThreeDotsBelow}{LTW}[1]{#1\char"41 }
\DeclareTextCommand{\tengwarTwoDotsAbove}{LTW}[1]{#1\char"42 }
\DeclareTextCommand{\tengwarTwoDotsBelow}{LTW}[1]{#1\char"43 }
\DeclareTextCommand{\tengwarAmaticse}{LTW}[1]{#1\char"44 }
\DeclareTextCommand{\tengwarNunticse}{LTW}[1]{#1\char"45 }
\DeclareTextCommand{\tengwarAcute}{LTW}[1]{#1\char"46 }
\DeclareTextCommand{\tengwarDoubleAcute}{LTW}[1]{#1\char"47 }
\DeclareTextCommand{\tengwarRightCurl}{LTW}[1]{#1\char"48 }
\DeclareTextCommand{\tengwarDoubleRightCurl}{LTW}[1]{#1\char"49 }
\DeclareTextCommand{\tengwarLeftCurl}{LTW}[1]{#1\char"4A }
\DeclareTextCommand{\tengwarDoubleLeftCurl}{LTW}[1]{#1\char"4B }
\DeclareTextCommand{\tengwarNasalizer}{LTW}[1]{#1\char"4C }
\DeclareTextCommand{\tengwarDoubler}{LTW}[1]{#1\char"4D }
\DeclareTextCommand{\tengwarTilde}{LTW}[1]{#1\char"4E }
\DeclareTextCommand{\tengwarBreve}{LTW}[1]{#1\char"4F }
\DeclareTextCommand{\tengwarLongCarrierBelow}{LTW}[1]{#1\char"56 }
\DeclareTextCommand{\tengwarDoubleAcuteBelow}{LTW}[1]{#1\char"57 }
\DeclareTextCommand{\tengwarRightCurlBelow}{LTW}[1]{#1\char"58 }
\DeclareTextCommand{\tengwarLeftCurlBelow}{LTW}[1]{#1\char"59 }

%
⟨/ltwenc.def⟩
```

## 4.25 File `ltwdsque.fd`

```
⟨*ltwdsque.fd⟩
```

This fontfamily loads the Quenya fonts from Dan Smith.

```
\ProvidesFile{ltwdsque.fd}[2001/10/11 Fontfamily dsque for Fontencoding LTW]%
\DeclareFontFamily{LTW}{dsque}{}
\DeclareFontShape{LTW}{dsque}{m}{n}{<-> tengdsq}{}
%
⟨/ltwdsque.fd⟩
```

## 4.26 File `ltwdsnol.fd`

```
⟨*ltwdsnol.fd⟩
```

This fontfamily loads the Noldor fonts from Dan Smith.

```
\ProvidesFile{ltwdsnol.fd}[2001/10/11 Fontfamily dsnol for Fontencoding LTW]%
```

```
\DeclareFontFamily{LTW}{dsnol}{}
\DeclareFontShape{LTW}{dsnol}{m}{n}{<-> tengdsn}{}
%
```
⟨/ltwdsnol.fd⟩

## 4.27 File ltwdssin.fd

⟨*ltwdssin.fd⟩

This fontfamily loads the Sindarin fonts from Dan Smith.

```
\ProvidesFile{ltwdssin.fd}[2001/10/11 Fontfamily dssin for Fontencoding LTW]%
\DeclareFontFamily{LTW}{dssin}{}
\DeclareFontShape{LTW}{dssin}{m}{n}{<-> tengdss}{}
%
```
⟨/ltwdssin.fd⟩

## 4.28 File lucenc.def

⟨*lucenc.def⟩

```
% Stuff working with TeX:
\catcode`\@11
\ifx\@tempcnta\undefined\csname newcount\endcsname\@tempcnta\fi
\ifx\@tempcntb\undefined\csname newcount\endcsname\@tempcntb\fi
\def\lucchar#1{%
  \begingroup
    \@tempcnta=#1\divide\@tempcnta by"1000
    \multiply\@tempcnta by-"1000\advance\@tempcnta by#1%
    \divide\@tempcnta by"100%
    \@tempcntb=#1\divide\@tempcntb by"10000
    \multiply\@tempcntb by-"10000\advance\@tempcntb by#1%
    \divide\@tempcntb by"1000%
    \xdef\LUC@plane@LUC{%
      \ifcase\@tempcntb0\or1\or2\or3\or4\or5\or6\or7\or
                       8\or9\or a\or b\or c\or d\or e\or f\fi
      \ifcase\@tempcnta0\or1\or2\or3\or4\or5\or6\or7\or
                       8\or9\or a\or b\or c\or d\or e\or f\fi}%
    \ifnum#1>"FFFF
      \@tempcnta=#1\divide\@tempcnta by"100000
      \multiply\@tempcnta by-"100000\advance\@tempcnta by#1%
      \divide\@tempcnta by"10000%
      \xdef\LUC@plane@LUC{%
        \ifcase\@tempcnta0\or1\or2\or3\or4\or5\or6\or7\or
                         8\or9\or a\or b\or c\or d\or e\or f\fi
        \LUC@plane@LUC}%
      \ifnum#1>"FFFFF
        \@tempcnta=#1\divide\@tempcnta by"1000000
        \multiply\@tempcnta by-"1000000\advance\@tempcnta by#1%
        \divide\@tempcnta by"100000%
        \xdef\LUC@plane@LUC{%
          \ifcase\@tempcnta0\or1\or2\or3\or4\or5\or6\or7\or
                           8\or9\or a\or b\or c\or d\or e\or f\fi
          \LUC@plane@LUC}%
      \fi
    \fi
```

```
    \@tempcnta=#1\divide\@tempcnta by"100
    \multiply\@tempcnta by-"100\advance\@tempcnta by#1%
    \relax
    %\typeout{Plane: \LUC@plane@LUC, Char: \number\@tempcnta}%
  \expandafter\endgroup
  \expandafter\luc@char\expandafter{\number\@tempcnta}%
}
\def\luc@loadfont{%
  \expandafter\ifx\csname LUC-font-\LUCfont\LUC@plane@LUC\endcsname\relax
    \expandafter\font\csname LUC-font-\LUCfont\LUC@plane@LUC\endcsname=%
      \LUCfont\LUC@plane@LUC\fi
  \csname LUC-font-\LUCfont\LUC@plane@LUC\endcsname}
\def\luc@char#1{%
  \ifx\LUC@plane@LUC\LUC@plane@old\else
    \ifx\LUCfont\undefined\selectfont
    \else\luc@loadfont\fi
  \fi
  \char#1 }
\ifx\NeedsTeXFormat\undefined\endinput\fi

% LaTeX-only stuff follows.
\ProvidesFile{lucenc.def}[2002/02/20 Encoding for Unicode fonts]
\DeclareFontEncoding{LUC}{}{}%
\DeclareFontSubstitution{LUC}{arial}{m}{n}%
%
\providecommand\LUC@@empty[1]{%
  \edef\mandatory@arg{\mandatory@arg\csname LUC@plane@\f@encoding\endcsname}%
  \empty@sfcnt#1%
  \edef\uc@temp@a{\csname LUC@plane@\f@encoding\endcsname}%
  \xdef\font@name{\csname \curr@fontshape/\f@size/\uc@temp@a\endcsname}}
\providecommand\LUC@@sub[1]{%
  \expandafter\ifx\csname LUC@\mandatory@arg/\f@size\endcsname\relax
  \expandafter\gdef\csname LUC@\mandatory@arg/\f@size\endcsname{}%
  \sub@sfcnt#1%
  \else
  \sub@sfcnt\@gobble
  \fi}
\DeclareSizeFunction{LUC}{\LUC@@empty\@font@warning}
\DeclareSizeFunction{LUCb}{\LUC@@empty\@font@warning}
\DeclareSizeFunction{sLUC}{\LUC@@empty\@font@info}
\DeclareSizeFunction{sLUCb}{\LUC@@empty\@font@info}
\DeclareSizeFunction{LUCsub}{\LUC@@sub\@font@warning}
\DeclareSizeFunction{LUCssub}{\LUC@@sub\@font@info}
%
\gdef\LUC@plane@LUC{00}%
\DeclareTextCommand{\textascii}{\LastDeclaredEncoding}[1]{\textunicodechar{‘#1}}
\DeclareTextCommand{\textunicodechar}{\LastDeclaredEncoding}[1]{\lucchar{#1}}

%%% Local Variables:
%%% mode: latex
%%% coding: utf-8
%%% TeX-master: "../test.tex"
%%% End:
%%% Local IspellDict: british
```

```
%
⟨/lucenc.def⟩
```

## 4.29 File lucarial.fd

```
⟨*lucarial.fd⟩
\ProvidesFile{lucarial.fd}[2002/02/17 .fd file for encoding LUC, family arial]
\DeclareFontFamily{LUC}{arial}{}
\DeclareFontShape{LUC}{arial}{m}{n}{<-> LUC * arialuni}{}
%
⟨/lucarial.fd⟩
```

## 4.30 File lucc2000.fd

```
⟨*lucc2000.fd⟩
\ProvidesFile{lucc2000.fd}[2002/02/17 .fd file for encoding LUC, family c2000]
\DeclareFontFamily{LUC}{c2000}{}
\DeclareFontShape{LUC}{c2000}{m}{n}{<-> LUC * code2k}{}
%
⟨/lucc2000.fd⟩
```

## 4.31 File mkrenc.def

```
⟨*mkrenc.def⟩
\ProvidesFile{mkrenc.def}[2003/11/29 Fontencoding MKR for use with package makor]
\makeatletter
%
\AtBeginDocument{%
  \let\mkr@quote\"
  \RequirePackage{makor}%
  \let\"\mkr@quote
  \expandafter\ifx\csname !hdefaultfont\endcsname\relax
    \expandafter\def\csname !hdefaultfont\endcsname{NFSS}\fi
  }%
\expandafter\g@addto@macro\csname selectfont \endcsname{\protect\@hfontadapt}
%
\begingroup
\escapechar=-1
\edef\temp@a{%
  \gdef\noexpand\@hfontadapt@
  \expandafter\string\csname select font \endcsname##1 ##2%
  \noexpand\@nil{%
    \edef\noexpand\temp@a{%
      \noexpand\noexpand\noexpand\hfontdef{\noexpand\mkr@font}{##1}{\noexpand\f@size pt}}\no
\xdef\mkr@at{\expandafter\string\csname\space at \endcsname}%
\endgroup
%
\def\@hfont@enc{MKR}
\def\@hfontadapt{%
  \ifx\f@encoding\@hfont@enc%
    \edef\mkr@font{mkr@\f@family\f@series\f@shape-\f@size}%
    %\typeout{HFONTADAPT: ID:\mkr@font, SIZE: \f@size}%
    \@ifundefined{\mkr@font}{%
      %\typeout{Needs adapting. (\expandafter\meaning\the\font)}%
      \edef\temp@a{\noexpand\@hfontadapt@\expandafter\meaning\the\font\space\noexpand\@nil}\
```

```
      }{}%
    \expandafter\hfont\expandafter{\mkr@font}%
  \fi
}
%
%
\DeclareFontEncoding{MKR}{}{}
\DeclareFontSubstitution{MKR}{omega}{m}{n}
%
\DeclareTextCommand\hebalef{MKR}{‘}
\DeclareTextCommand\hebbet{MKR}{v}
\DeclareTextCommand\hebgimel{MKR}{g}
\DeclareTextCommand\hebdalet{MKR}{d}
\DeclareTextCommand\hebhe{MKR}{h}
\DeclareTextCommand\hebvav{MKR}{w}
\DeclareTextCommand\hebzayin{MKR}{z}
\DeclareTextCommand\hebhet{MKR}{x}
\DeclareTextCommand\hebtet{MKR}{t}
\DeclareTextCommand\hebyod{MKR}{y}
\DeclareTextCommand\hebfinalkaf{MKR}{K\char94 }
\DeclareTextCommand\hebkaf{MKR}{K\NOBOUNDARY}
\DeclareTextCommand\heblamed{MKR}{l}
\DeclareTextCommand\hebfinalmem{MKR}{m\char94 }
\DeclareTextCommand\hebmem{MKR}{m\NOBOUNDARY}
\DeclareTextCommand\hebfinalnun{MKR}{n\char94 }
\DeclareTextCommand\hebnun{MKR}{n\NOBOUNDARY}
\DeclareTextCommand\hebsamekh{MKR}{s}
\DeclareTextCommand\hebayin{MKR}{‘‘}
\DeclareTextCommand\hebfinalpe{MKR}{f\char94 }
\DeclareTextCommand\hebpe{MKR}{f\NOBOUNDARY}
\DeclareTextCommand\hebfinaltsadi{MKR}{ts\char94 }
\DeclareTextCommand\hebtsadi{MKR}{ts\NOBOUNDARY}
\DeclareTextCommand\hebqof{MKR}{q}
\DeclareTextCommand\hebresh{MKR}{r}
\DeclareTextCommand\hebshin{MKR}{sh}
\DeclareTextCommand\hebtav{MKR}{s\char94 }
\DeclareTextSymbol\doublevav{MKR}{"83}
\DeclareTextSymbol\vavyod{MKR}{"84}
\DeclareTextSymbol\doubleyod{MKR}{"81}
\DeclareTextCommand\maqaf{MKR}{-{}}
\DeclareTextCommand\sofpasuq{MKR}{:}
\DeclareTextSymbol\geresh{MKR}{251}
\DeclareTextSymbol\gershayim{MKR}{"22}
\DeclareTextSymbol\hebaleflamed{MKR}{"A4}
%
\DeclareTextCommand\dagesh{MKR}[1]{#1*}
\DeclareTextCommand\sheva{MKR}[1]{#1\vwlSHEVA}
\DeclareTextCommand\hatafsegol{MKR}[1]{#1\vwlCOLON\vwlE}
\DeclareTextCommand\hatafpatah{MKR}[1]{#1\vwlCOLON\vwlA}
\DeclareTextCommand\hatafqamats{MKR}[1]{#1\vwlCOLON\vwlPLUS}
\DeclareTextCommand\hiriq{MKR}[1]{#1\vwlI}
\DeclareTextCommand\tsere{MKR}[1]{#1\vwlE\vwlI}
\DeclareTextCommand\segol{MKR}[1]{#1\vwlE}
\DeclareTextCommand\patah{MKR}[1]{#1\vwlA}
```

```
\DeclareTextCommand\qamats{MKR}[1]{#1\vwlPLUS}
\DeclareTextCommand\qubuts{MKR}[1]{#1\vwlU}
\DeclareTextCommand\meteg{MKR}[1]{#1\vwlVERT}
\DeclareTextCommand\holam{MKR}[1]{#1o}
\DeclareTextCommand\shindot{MKR}[1]{sh\char94 }% Only useful as \shindot\shin
\DeclareTextCommand\sindot{MKR}[1]{\char94s}% Only useful as \sindot\shin
%
\DeclareTextCommand{\textascii}{MKR}[1]{\@textascii@switch{#1}}
\DeclareTextComposite\patach{MKR}\doubleyod{"82}
\DeclareTextCompositeCommand\dagesh{MKR}\finalkaf{K*\char94 }
\DeclareTextCompositeCommand\dagesh{MKR}\kaf{K*\NOBOUNDARY}
\DeclareTextCompositeCommand\dagesh{MKR}\finalmem{m*{}}
\DeclareTextCompositeCommand\dagesh{MKR}\mem{m*\NOBOUNDARY}
\DeclareTextCompositeCommand\dagesh{MKR}\finalnun{n*{}}
\DeclareTextCompositeCommand\dagesh{MKR}\nun{n*\NOBOUNDARY}
%\DeclareTextCompositeCommand\dagesh{MKR}\finalpe{f*\char94 }
\DeclareTextCompositeCommand\dagesh{MKR}\pe{f*\NOBOUNDARY}
%\DeclareTextCompositeCommand\dagesh{MKR}\finaltsadi{ts*\char94 }
\DeclareTextCompositeCommand\dagesh{MKR}\tsadi{ts*\NOBOUNDARY}
%
%
⟨/mkrenc.def⟩
```

## 4.32 File mkrezra.fd

```
⟨*mkrezra.fd⟩
\ProvidesFile{mkrezra.fd}[2002/09/20 ezra family for encoding MKR]%
\DeclareFontFamily{MKR}{ezra}{}
\DeclareFontShape{MKR}{ezra}{m}{n}{<-> * ezramm}{}
\DeclareFontShape{MKR}{ezra}{m}{it}{<-> * ezraimm}{}
\DeclareFontShape{MKR}{ezra}{bx}{n}{<-> * ezrabmm}{}
\DeclareFontShape{MKR}{ezra}{bx}{it}{<-> * ezrabimm}{}
\DeclareFontShape{MKR}{ezra}{m}{o}{<-> * ezraomm}{}
%
%
⟨/mkrezra.fd⟩
```

## 4.33 File mkrhadas.fd

```
⟨*mkrhadas.fd⟩
\ProvidesFile{mkrhadas.fd}[2002/09/20 hadas family for encoding MKR]%
\DeclareFontFamily{MKR}{hadas}{}
\DeclareFontShape{MKR}{hadas}{m}{n}{<-> * hadassahmm}{}
\DeclareFontShape{MKR}{hadas}{m}{it}{<-> * hadassaimm}{}
\DeclareFontShape{MKR}{hadas}{bx}{n}{<-> * hadassabmm}{}
\DeclareFontShape{MKR}{hadas}{bx}{it}{<-> * hadassbimm}{}
%
%
⟨/mkrhadas.fd⟩
```

## 4.34 File mkromega.fd

```
⟨*mkromega.fd⟩
\ProvidesFile{mkromega.fd}[2002/09/20 omega family for encoding MKR]%
\DeclareFontFamily{MKR}{omega}{}
```

```
\DeclareFontShape{MKR}{omega}{m}{n}{<-> * ohebrmm}{}
%
%
⟨/mkromega.fd⟩
```

## 4.35 File mkrrashi.fd

```
⟨*mkrrashi.fd⟩
\ProvidesFile{mkrrashi.fd}[2002/09/20 rashi family for encoding MKR]%
\DeclareFontFamily{MKR}{rashi}{}
\DeclareFontShape{MKR}{rashi}{m}{n}{<-> * rashimm}{}
\DeclareFontShape{MKR}{rashi}{bx}{n}{<-> * rashbmm}{}
%
%
⟨/mkrrashi.fd⟩
```

## 4.36 File t2denc.def

```
⟨*t2denc.def⟩
% This file is a hack. When a manually created t2denc.def
% appears (e.g. contributed with the LH fonts), this hack should be deleted.
\NeedsTeXFormat{LaTeX2e}[1998/12/01]%
\ProvidesFile{t2denc.def}[Experimental T2D]%
\DeclareFontEncoding{T2D}{}{}%
\DeclareFontSubstitution{\LastDeclaredEncoding}{cmr}{m}{n}%
\DeclareTextSymbol\CYRA\LastDeclaredEncoding{"C0}%
\DeclareTextSymbol\cyra\LastDeclaredEncoding{"E0}%
\DeclareTextSymbol\CYRB\LastDeclaredEncoding{"C1}%
\DeclareTextSymbol\cyrb\LastDeclaredEncoding{"E1}%
\DeclareTextSymbol\CYRV\LastDeclaredEncoding{"C2}%
\DeclareTextSymbol\cyrv\LastDeclaredEncoding{"E2}%
\DeclareTextSymbol\CYRG\LastDeclaredEncoding{"C3}%
\DeclareTextSymbol\cyrg\LastDeclaredEncoding{"E3}%
\DeclareTextSymbol\CYRD\LastDeclaredEncoding{"C4}%
\DeclareTextSymbol\cyrd\LastDeclaredEncoding{"E4}%
\DeclareTextSymbol\CYRE\LastDeclaredEncoding{"C5}%
\DeclareTextSymbol\cyre\LastDeclaredEncoding{"E5}%
\DeclareTextSymbol\CYRZH\LastDeclaredEncoding{"C6}%
\DeclareTextSymbol\cyrzh\LastDeclaredEncoding{"E6}%
\DeclareTextSymbol\CYRZ\LastDeclaredEncoding{"C7}%
\DeclareTextSymbol\cyrz\LastDeclaredEncoding{"E7}%
\DeclareTextSymbol\CYRI\LastDeclaredEncoding{"C8}%
\DeclareTextSymbol\cyri\LastDeclaredEncoding{"E8}%
\DeclareTextSymbol\CYRISHRT\LastDeclaredEncoding{"C9}%
\DeclareTextSymbol\cyrishrt\LastDeclaredEncoding{"E9}%
\DeclareTextSymbol\CYRK\LastDeclaredEncoding{"CA}%
\DeclareTextSymbol\cyrk\LastDeclaredEncoding{"EA}%
\DeclareTextSymbol\CYRL\LastDeclaredEncoding{"CB}%
\DeclareTextSymbol\cyrl\LastDeclaredEncoding{"EB}%
\DeclareTextSymbol\CYRM\LastDeclaredEncoding{"CC}%
\DeclareTextSymbol\cyrm\LastDeclaredEncoding{"EC}%
\DeclareTextSymbol\CYRN\LastDeclaredEncoding{"CD}%
\DeclareTextSymbol\cyrn\LastDeclaredEncoding{"ED}%
\DeclareTextSymbol\CYRO\LastDeclaredEncoding{"CE}%
\DeclareTextSymbol\cyro\LastDeclaredEncoding{"EE}%
```

```
\DeclareTextSymbol\CYRP\LastDeclaredEncoding{"CF}%
\DeclareTextSymbol\cyrp\LastDeclaredEncoding{"EF}%
\DeclareTextSymbol\CYRR\LastDeclaredEncoding{"D0}%
\DeclareTextSymbol\cyrr\LastDeclaredEncoding{"F0}%
\DeclareTextSymbol\CYRS\LastDeclaredEncoding{"D1}%
\DeclareTextSymbol\cyrs\LastDeclaredEncoding{"F1}%
\DeclareTextSymbol\CYRT\LastDeclaredEncoding{"D2}%
\DeclareTextSymbol\cyrt\LastDeclaredEncoding{"F2}%
\DeclareTextSymbol\CYRU\LastDeclaredEncoding{"D3}%
\DeclareTextSymbol\cyru\LastDeclaredEncoding{"F3}%
\DeclareTextSymbol\CYRF\LastDeclaredEncoding{"D4}%
\DeclareTextSymbol\cyrf\LastDeclaredEncoding{"F4}%
\DeclareTextSymbol\CYRH\LastDeclaredEncoding{"D5}%
\DeclareTextSymbol\cyrh\LastDeclaredEncoding{"F5}%
\DeclareTextSymbol\CYRC\LastDeclaredEncoding{"D6}%
\DeclareTextSymbol\cyrc\LastDeclaredEncoding{"F6}%
\DeclareTextSymbol\CYRCH\LastDeclaredEncoding{"D7}%
\DeclareTextSymbol\cyrch\LastDeclaredEncoding{"F7}%
\DeclareTextSymbol\CYRSH\LastDeclaredEncoding{"D8}%
\DeclareTextSymbol\cyrsh\LastDeclaredEncoding{"F8}%
\DeclareTextSymbol\CYRSHCH\LastDeclaredEncoding{"D9}%
\DeclareTextSymbol\cyrshch\LastDeclaredEncoding{"F9}%
\DeclareTextSymbol\CYRHRDSN\LastDeclaredEncoding{"DA}%
\DeclareTextSymbol\cyrhrdsn\LastDeclaredEncoding{"FA}%
\DeclareTextSymbol\CYRERY\LastDeclaredEncoding{"DB}%
\DeclareTextSymbol\cyrery\LastDeclaredEncoding{"FB}%
\DeclareTextSymbol\CYRSFTSN\LastDeclaredEncoding{"DC}%
\DeclareTextSymbol\cyrsftsn\LastDeclaredEncoding{"FC}%
\DeclareTextSymbol\CYREREV\LastDeclaredEncoding{"DD}%
\DeclareTextSymbol\cyrerev\LastDeclaredEncoding{"FD}%
\DeclareTextSymbol\CYRYU\LastDeclaredEncoding{"DE}%
\DeclareTextSymbol\cyryu\LastDeclaredEncoding{"FE}%
\DeclareTextSymbol\CYRYA\LastDeclaredEncoding{"DF}%
\DeclareTextSymbol\cyrya\LastDeclaredEncoding{"FF}%
\DeclareTextSymbol\CYRYO\LastDeclaredEncoding{"9C}%
\DeclareTextSymbol\cyryo\LastDeclaredEncoding{"BC}%
\DeclareTextSymbol\CYRDZE\LastDeclaredEncoding{"8F}%
\DeclareTextSymbol\cyrdze\LastDeclaredEncoding{"AF}%
\DeclareTextSymbol\CYRYAT\LastDeclaredEncoding{"93}%
\DeclareTextSymbol\cyryat\LastDeclaredEncoding{"B3}%
\DeclareTextSymbol\CYRBYUS\LastDeclaredEncoding{"97}%
\DeclareTextSymbol\cyrbyus\LastDeclaredEncoding{"B7}%
\DeclareTextSymbol\CYRIZH\LastDeclaredEncoding{"8A}%
\DeclareTextSymbol\cyrizh\LastDeclaredEncoding{"AA}%
\DeclareTextSymbol\CYRIE\LastDeclaredEncoding{"99}%
\DeclareTextSymbol\cyrie\LastDeclaredEncoding{"B9}%
\DeclareTextSymbol\CYREPS\LastDeclaredEncoding{"9B}%
\DeclareTextSymbol\cyreps\LastDeclaredEncoding{"BB}%
\DeclareTextSymbol\CYRAZ\LastDeclaredEncoding{"80}%
\DeclareTextSymbol\cyraz\LastDeclaredEncoding{"A0}%
\DeclareTextSymbol\CYRIAZ\LastDeclaredEncoding{"81}%
\DeclareTextSymbol\cyriaz\LastDeclaredEncoding{"A1}%
\DeclareTextSymbol\CYRLYUS\LastDeclaredEncoding{"82}%
\DeclareTextSymbol\cyrlyus\LastDeclaredEncoding{"A2}%
```

```
\DeclareTextSymbol\CYRIOTLYUS\LastDeclaredEncoding{"83}%
\DeclareTextSymbol\cyriotlyus\LastDeclaredEncoding{"A3}%
\DeclareTextSymbol\CYRGERV\LastDeclaredEncoding{"84}%
\DeclareTextSymbol\cyrgerv\LastDeclaredEncoding{"A4}%
\DeclareTextSymbol\CYRZEMLA\LastDeclaredEncoding{"86}%
\DeclareTextSymbol\cyrzemla\LastDeclaredEncoding{"A6}%
\DeclareTextSymbol\CYRKSI\LastDeclaredEncoding{"87}%
\DeclareTextSymbol\cyrksi\LastDeclaredEncoding{"A7}%
\DeclareTextSymbol\CYRVARIZHE\LastDeclaredEncoding{"88}%
\DeclareTextSymbol\cyrvarizhe\LastDeclaredEncoding{"A8}%
\DeclareTextSymbol\CYRIZHE\LastDeclaredEncoding{"89}%
\DeclareTextSymbol\cyrizhe\LastDeclaredEncoding{"A9}%
\DeclareTextSymbol\CYROMGA\LastDeclaredEncoding{"8B}%
\DeclareTextSymbol\cyromga\LastDeclaredEncoding{"AB}%
\DeclareTextSymbol\CYROMRND\LastDeclaredEncoding{"8C}%
\DeclareTextSymbol\cyromrnd\LastDeclaredEncoding{"AC}%
\DeclareTextSymbol\CYROT\LastDeclaredEncoding{"8D}%
\DeclareTextSymbol\cyrot\LastDeclaredEncoding{"AD}%
\DeclareTextSymbol\CYROMTLO\LastDeclaredEncoding{"8E}%
\DeclareTextSymbol\cyromtlo\LastDeclaredEncoding{"AE}%
\DeclareTextSymbol\CYRFITA\LastDeclaredEncoding{"90}%
\DeclareTextSymbol\cyrfita\LastDeclaredEncoding{"B0}%
\DeclareTextSymbol\CYRKOPPA\LastDeclaredEncoding{"91}%
\DeclareTextSymbol\cyrkoppa\LastDeclaredEncoding{"B1}%
\DeclareTextSymbol\CYRUK\LastDeclaredEncoding{"92}%
\DeclareTextSymbol\cyruk\LastDeclaredEncoding{"B2}%
\DeclareTextSymbol\CYRCHERV\LastDeclaredEncoding{"94}%
\DeclareTextSymbol\cyrcherv\LastDeclaredEncoding{"B4}%
\DeclareTextSymbol\CYRPSI\LastDeclaredEncoding{"95}%
\DeclareTextSymbol\cyrpsi\LastDeclaredEncoding{"B5}%
\DeclareTextSymbol\CYRSHTA\LastDeclaredEncoding{"96}%
\DeclareTextSymbol\cyrshta\LastDeclaredEncoding{"B6}%
\DeclareTextSymbol\CYRIOTBYUS\LastDeclaredEncoding{"98}%
\DeclareTextSymbol\cyriotbyus\LastDeclaredEncoding{"B8}%
\DeclareTextSymbol\CYRIOTEST\LastDeclaredEncoding{"9A}%
\DeclareTextSymbol\cyriotest\LastDeclaredEncoding{"BA}%
\DeclareTextSymbol\CYRNARROWE\LastDeclaredEncoding{"9B}%
\DeclareTextSymbol\cyrnarrowe\LastDeclaredEncoding{"BB}%
\DeclareTextAccent\‘\LastDeclaredEncoding{"00}%
\DeclareTextAccent\’\LastDeclaredEncoding{"01}%
\DeclareTextAccent\^\LastDeclaredEncoding{"02}%
\DeclareTextAccent\~\LastDeclaredEncoding{"03}%
\DeclareTextAccent\"\LastDeclaredEncoding{"04}%
\DeclareTextAccent\H\LastDeclaredEncoding{"05}%
\DeclareTextAccent\r\LastDeclaredEncoding{"06}%
\DeclareTextAccent\v\LastDeclaredEncoding{"07}%
\DeclareTextAccent\u\LastDeclaredEncoding{"08}%
\DeclareTextAccent\=\LastDeclaredEncoding{"09}%
\DeclareTextAccent\.\LastDeclaredEncoding{"0A}%
\DeclareTextSymbol\cyrlangle\LastDeclaredEncoding{"0E}%
\DeclareTextSymbol\cyrrangle\LastDeclaredEncoding{"0F}%
\DeclareTextAccent\F\LastDeclaredEncoding{"12}%
\DeclareTextAccent\C\LastDeclaredEncoding{"13}%
\DeclareTextAccent\U\LastDeclaredEncoding{"14}%
```

```
\DeclareTextSymbol\cyrdash\LastDeclaredEncoding{"16}%
\DeclareTextSymbol\perthousand\LastDeclaredEncoding{"18}%
\DeclareTextSymbol\i\LastDeclaredEncoding{"19}%
\DeclareTextSymbol\j\LastDeclaredEncoding{"1A}%
\DeclareTextSymbol\CYRNo\LastDeclaredEncoding{"9D}%
\DeclareTextSymbol\textsection\LastDeclaredEncoding{"9F}%
\DeclareTextSymbol\quotedblbase\LastDeclaredEncoding{"BD}%
\DeclareTextSymbol\guillemotleft\LastDeclaredEncoding{"BE}%
\DeclareTextSymbol\guillemotright\LastDeclaredEncoding{"BF}%
\DeclareTextAccent\CYRtitlo\LastDeclaredEncoding{"0B}%
\DeclareTextAccent\CYRpalatal\LastDeclaredEncoding{"0C}%
\DeclareTextAccent\CYRpaerok\LastDeclaredEncoding{"0D}%
\DeclareTextAccent\CYRkamora\LastDeclaredEncoding{"17}%
\DeclareTextAccent\CYRpsili\LastDeclaredEncoding{"1B}%
\DeclareTextAccent\CYRdasia\LastDeclaredEncoding{"1C}%
\DeclareTextAccent\CYRzvat\LastDeclaredEncoding{"1D}%
\DeclareTextAccent\CYRpneuac\LastDeclaredEncoding{"1E}%
\DeclareTextAccent\CYRpneugrav\LastDeclaredEncoding{"1F}%
\DeclareTextAccent\CYRthousands\LastDeclaredEncoding{"9E}%
\DeclareTextSymbol\CYRNASH\LastDeclaredEncoding{"85}%
\DeclareTextSymbol\cyrnash\LastDeclaredEncoding{"A5}%
%
⟨/t2denc.def⟩
```

## 4.37 File t2dcmr.fd

```
⟨*t2dcmr.fd⟩
\ProvidesFile{t2dcmr.fd}
  [Experimental T2D cmr]
\providecommand{\EC@family}[5]{%
  \DeclareFontShape{#1}{#2}{#3}{#4}%
  {<5><6><7><8><9><10><10.95><12><14.4>%
   <17.28><20.74><24.88><29.86><35.83>genb*#5}{}}
\DeclareFontFamily{T2D}{cmr}{}
\EC@family{T2D}{cmr}{m}{n}{ldrm}
\EC@family{T2D}{cmr}{m}{sl}{ldsl}
\EC@family{T2D}{cmr}{m}{it}{ldti}
\EC@family{T2D}{cmr}{m}{sc}{ldcc}
\EC@family{T2D}{cmr}{bx}{n}{ldbx}
\EC@family{T2D}{cmr}{b}{n}{ldrb}
\EC@family{T2D}{cmr}{bx}{it}{ldbi}
\EC@family{T2D}{cmr}{bx}{sl}{ldbl}
\EC@family{T2D}{cmr}{bx}{sc}{ldxc}
\EC@family{T2D}{cmr}{m}{ui}{ldui}
%
⟨/t2dcmr.fd⟩
```

## 4.38 File tengwarDS.enc

```
⟨*tengwarDS.enc⟩
%
%
% nomapping(anna_sindarinwa,h) % (in Quenya-A)
% nomapping(stl_vala,???)
%
```

```
% nomapping(double_acute)
% nomapping(double_right_curl)
% nomapping(double_left_curl)
% nomapping(tilde)

%


%
%
% ligature tinco three_above (one E) is OK.
%
% ligature anna three_above (h E) is OK.
% ligature anna acute (h R) is OK.
% ligature anna amaticse (h T) is OK.
% ligature anna right_curl (h Y) is OK.
% ligature anna chevron (h Ugrave) is OK.
% ligature anna nasalizer (h bracketleft) is OK.

% ligature quesse three_above (z E) is OK.
% ligature quesse acute (z R) is OK.
% ligature quesse amaticse (z T) is OK.
% ligature quesse right_curl (z Y) is OK.
% ligature quesse chevron (z Ugrave) is OK.
% ligature quesse nasalizer (z bracketleft) is OK.

% ligature lambe three_above (j E) is OK.
% ligature lambe acute (j R) is OK.
% ligature lambe amaticse (j T) is OK.
% ligature lambe right_curl (j Y) is OK.
% ligature lambe chevron (j Ugrave) is OK.
% ligature lambe nasalizer (j bracketleft) is OK.

% ligature malta three_above:
% LIGKERN t E |=:> numbersign
% ligature malta acute:
% LIGKERN t R |=:> dollar
% ligature malta amaticse:
% LIGKERN t T |=:> percent
% ligature malta right_curl:
% LIGKERN t Y |=:> asciicircum
% ligature malta chevron:
% LIGKERN t Ugrave |=:> Oslash
% ligature malta nasalizer:
% LIGKERN t bracketleft |=:> braceleft

% ligature nuumen three_above:
% LIGKERN five E |=:> numbersign
% ligature nuumen acute:
% LIGKERN five R |=:> dollar
% ligature nuumen amaticse:
% LIGKERN five T |=:> percent
% ligature nuumen right_curl:
% LIGKERN five Y |=:> asciicircum
% ligature nuumen chevron:
```

```
% LIGKERN five Ugrave |=:> Oslash
% ligature nuumen nasalizer:
% LIGKERN five bracketleft |=:> braceleft

% ligature parma three_above (q E) is OK.
% ligature parma acute (q R) is OK.
% ligature parma amaticse (q T) is OK.
% ligature parma right_curl (q Y) is OK.
% ligature parma chevron (q Ugrave) is OK.
% ligature parma nasalizer (q bracketleft) is OK.

% ligature silme_nuquerna three_above (i E) is OK.
% ligature silme_nuquerna acute (i R) is OK.
% ligature silme_nuquerna amaticse (i T) is OK.
% ligature silme_nuquerna right_curl (i Y) is OK.
% ligature silme_nuquerna chevron (i Ugrave) is OK.
% ligature silme_nuquerna nasalizer (i bracketleft) is OK.

% ligature tinco three_above (one E) is OK.
% ligature tinco acute (one R) is OK.
% ligature tinco amaticse (one T) is OK.
% ligature tinco right_curl (one Y) is OK.
% ligature tinco chevron (one Ugrave) is OK.
% ligature tinco nasalizer (one bracketleft) is OK.

% ligature vala three_above (y E) is OK.
% ligature vala acute (y R) is OK.
% ligature vala amaticse (y T) is OK.
% ligature vala right_curl (y Y) is OK.
% ligature vala chevron (y Ugrave) is OK.
% ligature vala nasalizer (y bracketleft) is OK.

% ligature short_carrier three_above:
% LIGKERN grave E |=:> C
% ligature short_carrier acute:
% LIGKERN grave R |=:> V
% ligature short_carrier amaticse:
% LIGKERN grave T |=:> B
% ligature short_carrier right_curl:
% LIGKERN grave Y |=:> N
% ligature short_carrier chevron:
% LIGKERN grave Ugrave |=:> Ucircumflex
% ligature short_carrier nasalizer (grave bracketleft) is OK.

% ligature three_above nasalizer:
% LIGKERN numbersign bracketleft |=:> braceleft
% ligature acute nasalizer:
% LIGKERN dollar bracketleft |=:> braceleft
% ligature amaticse nasalizer:
% LIGKERN percent bracketleft |=:> braceleft
% ligature right_curl nasalizer:
% LIGKERN asciicircum bracketleft |=:> braceleft
% ligature chevron nasalizer:
% LIGKERN Oslash bracketleft |=:> braceleft
```

```
4050
4051 % ligature nasalizer three_above:
4052 % LIGKERN braceleft E |=:> numbersign
4053 % ligature nasalizer acute:
4054 % LIGKERN braceleft R |=:> dollar
4055 % ligature nasalizer amaticse:
4056 % LIGKERN braceleft T |=:> percent
4057 % ligature nasalizer right_curl:
4058 % LIGKERN braceleft Y |=:> asciicircum
4059 % ligature nasalizer chevron:
4060 % LIGKERN braceleft Ugrave |=:> Oslash
4061 %
4062 %
4063 %
4064 /TengwarEncoding [
4065
4066 % 0x00
4067  /one /q /a /z
4068  /two /w /s /x
4069  /three /e /d /c
4070  /four /r /f /v
4071 % 0x10
4072  /five /t /g /b
4073  /six /y /h /n
4074  /seven /eight /j /m
4075  /eight /i /k /comma
4076 % 0x20
4077  /nine /o /l /period
4078  /onehalf /grave /asciitilde /.c0x7f
4079  /exclam /Q /A /Z
4080  /at /W /S /X
4081 % 0x30
4082  /.c240 /.c0x7f /bracketright /.c241
4083  /space /space /space /space % 4567
4084  /space /space /space /space % 89AB
4085  /space /space /space /space % CDEF
4086 % 0x40
4087  /E /.c209 /.c213 /.c205
4088  /T /.c201 /R /.c0x7f
4089  /Y /.c0x7f /.c225 /.c0x7f
4090  /bracketleft /quotesingle /.c0x7f /.c0x7f
4091 % 0x50
4092  /equal /hyphen /.c193 /.c192
4093  /backslash /.c194 /.c0x7f /.c0x7f
4094  /.c0x7f /space /.c0x7f /space
4095  /.c0x7f /.c0x7f /space /space
4096 % 0x60
4097  /space /space /.c242 /.c243
4098  /.c244 /.c245 /.c246 /.c247
4099  /.c248 /.c249 /.c250 /.c251
4100  /.c0x7f /.c0x7f /.c0x7f /space
4101 % 0x70
4102  /space /space /space /space % 0123
4103  /space /space /space /space % 4567
```

```
 /space /space /space /space % 89AB
 /space /space /space /space
% 0x80
 /numbersign /D /C /Oslash % 0123
 /Uacute /Ucircumflex /dollar /F % 4567
 /V /percent /G /B % 89AB
 /asciicircum /H /N /braceleft % CDEF
% 0x90
 /quotedbl /question /.c212 /.c214 % 0123
 /.c215 /.c204 /.c206 /.c207 % 4567
 /.c208 /.c210 /.c211 /.c200 % 89AB
 /.c202 /.c203 /.c224 /.c226 % CDEF
% 0xA0
 /.c227 /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
% 0xB0
 /.notdef /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
% 0xC0
 /.notdef /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
% 0xD0
 /.notdef /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
% 0xE0
 /.notdef /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
% 0xF0
 /.notdef /.notdef /.notdef /.notdef % 0123
 /.notdef /.notdef /.notdef /.notdef % 4567
 /.notdef /.notdef /.notdef /.notdef % 89AB
 /.notdef /.notdef /.notdef /.notdef % CDEF
] def


% eof
%
⟨/tengwarDS.enc⟩
```

## 4.39 File cp1252.enc

```
⟨*cp1252.enc⟩
/CP1252Encoding [
```

```
/.c0x0000 /.c0x0001 /.c0x0002 /.c0x0003 /.c0x0004 /.c0x0005 /.c0x0006
/.c0x0007 /.c0x0008 /.c0x0009 /.c0x000A /.c0x000B /.c0x000C /.c0x000D
/.c0x000E /.c0x000F /.c0x0010 /.c0x0011 /.c0x0012 /.c0x0013 /.c0x0014
/.c0x0015 /.c0x0016 /.c0x0017 /.c0x0018 /.c0x0019 /.c0x001A /.c0x001B
/.c0x001C /.c0x001D /.c0x001E /.c0x001F /.c0x0020 /.c0x0021 /.c0x0022
/.c0x0023 /.c0x0024 /.c0x0025 /.c0x0026 /.c0x0027 /.c0x0028 /.c0x0029
/.c0x002A /.c0x002B /.c0x002C /.c0x002D /.c0x002E /.c0x002F /.c0x0030
/.c0x0031 /.c0x0032 /.c0x0033 /.c0x0034 /.c0x0035 /.c0x0036 /.c0x0037
/.c0x0038 /.c0x0039 /.c0x003A /.c0x003B /.c0x003C /.c0x003D /.c0x003E
/.c0x003F /.c0x0040 /.c0x0041 /.c0x0042 /.c0x0043 /.c0x0044 /.c0x0045
/.c0x0046 /.c0x0047 /.c0x0048 /.c0x0049 /.c0x004A /.c0x004B /.c0x004C
/.c0x004D /.c0x004E /.c0x004F /.c0x0050 /.c0x0051 /.c0x0052 /.c0x0053
/.c0x0054 /.c0x0055 /.c0x0056 /.c0x0057 /.c0x0058 /.c0x0059 /.c0x005A
/.c0x005B /.c0x005C /.c0x005D /.c0x005E /.c0x005F /.c0x0060 /.c0x0061
/.c0x0062 /.c0x0063 /.c0x0064 /.c0x0065 /.c0x0066 /.c0x0067 /.c0x0068
/.c0x0069 /.c0x006A /.c0x006B /.c0x006C /.c0x006D /.c0x006E /.c0x006F
/.c0x0070 /.c0x0071 /.c0x0072 /.c0x0073 /.c0x0074 /.c0x0075 /.c0x0076
/.c0x0077 /.c0x0078 /.c0x0079 /.c0x007A /.c0x007B /.c0x007C /.c0x007D
/.c0x007E /.c0x007F /.c0x20AC /.notdef /.c0x201A /.c0x0192 /.c0x201E
/.c0x2026 /.c0x2020 /.c0x2021 /.c0x02C6 /.c0x2030 /.c0x0160 /.c0x2039
/.c0x0152 /.notdef /.c0x017D /.notdef /.notdef /.c0x2018 /.c0x2019
/.c0x201C /.c0x201D /.c0x2022 /.c0x2013 /.c0x2014 /.c0x02DC /.c0x2122
/.c0x0161 /.c0x203A /.c0x0153 /.notdef /.c0x017E /.c0x0178 /.c0x00A0
/.c0x00A1 /.c0x00A2 /.c0x00A3 /.c0x00A4 /.c0x00A5 /.c0x00A6 /.c0x00A7
/.c0x00A8 /.c0x00A9 /.c0x00AA /.c0x00AB /.c0x00AC /.c0x00AD /.c0x00AE
/.c0x00AF /.c0x00B0 /.c0x00B1 /.c0x00B2 /.c0x00B3 /.c0x00B4 /.c0x00B5
/.c0x00B6 /.c0x00B7 /.c0x00B8 /.c0x00B9 /.c0x00BA /.c0x00BB /.c0x00BC
/.c0x00BD /.c0x00BE /.c0x00BF /.c0x00C0 /.c0x00C1 /.c0x00C2 /.c0x00C3
/.c0x00C4 /.c0x00C5 /.c0x00C6 /.c0x00C7 /.c0x00C8 /.c0x00C9 /.c0x00CA
/.c0x00CB /.c0x00CC /.c0x00CD /.c0x00CE /.c0x00CF /.c0x00D0 /.c0x00D1
/.c0x00D2 /.c0x00D3 /.c0x00D4 /.c0x00D5 /.c0x00D6 /.c0x00D7 /.c0x00D8
/.c0x00D9 /.c0x00DA /.c0x00DB /.c0x00DC /.c0x00DD /.c0x00DE /.c0x00DF
/.c0x00E0 /.c0x00E1 /.c0x00E2 /.c0x00E3 /.c0x00E4 /.c0x00E5 /.c0x00E6
/.c0x00E7 /.c0x00E8 /.c0x00E9 /.c0x00EA /.c0x00EB /.c0x00EC /.c0x00ED
/.c0x00EE /.c0x00EF /.c0x00F0 /.c0x00F1 /.c0x00F2 /.c0x00F3 /.c0x00F4
/.c0x00F5 /.c0x00F6 /.c0x00F7 /.c0x00F8 /.c0x00F9 /.c0x00FA /.c0x00FB
/.c0x00FC /.c0x00FD /.c0x00FE /.c0x00FF
] def

% eof
%
```
⟨/cp1252.enc⟩

## 4.40 File xsenc.def

```
⟨*xsenc.def⟩
% This file is a hack. When a manually created xsenc.def
% appears (e.g. contributed with the LH fonts), this hack should be deleted.
\NeedsTeXFormat{LaTeX2e}[1998/12/01]%
\ProvidesFile{xsenc.def}[Experimental XS]%
\DeclareFontEncoding{XS}{}{}%
\DeclareFontSubstitution{\LastDeclaredEncoding}{cmr}{m}{n}%
\DeclareTextSymbol\CYRII\LastDeclaredEncoding{"41}%
\DeclareTextSymbol\cyrii\LastDeclaredEncoding{"61}%
```

```
\DeclareTextSymbol\CYRJE\LastDeclaredEncoding{"42}%
\DeclareTextSymbol\cyrje\LastDeclaredEncoding{"62}%
\DeclareTextSymbol\CYRDZE\LastDeclaredEncoding{"43}%
\DeclareTextSymbol\cyrdze\LastDeclaredEncoding{"63}%
\DeclareTextSymbol\CYRYAT\LastDeclaredEncoding{"44}%
\DeclareTextSymbol\cyryat\LastDeclaredEncoding{"64}%
\DeclareTextSymbol\CYRBYUS\LastDeclaredEncoding{"45}%
\DeclareTextSymbol\cyrbyus\LastDeclaredEncoding{"65}%
\DeclareTextSymbol\CYRIZH\LastDeclaredEncoding{"46}%
\DeclareTextSymbol\cyrizh\LastDeclaredEncoding{"66}%
\DeclareTextSymbol\CYRYI\LastDeclaredEncoding{"47}%
\DeclareTextSymbol\cyryi\LastDeclaredEncoding{"67}%
\DeclareTextSymbol\CYRNG\LastDeclaredEncoding{"48}%
\DeclareTextSymbol\cyrng\LastDeclaredEncoding{"68}%
\DeclareTextSymbol\CYRIE\LastDeclaredEncoding{"49}%
\DeclareTextSymbol\cyrie\LastDeclaredEncoding{"69}%
\DeclareTextSymbol\CYRAZ\LastDeclaredEncoding{"4A}%
\DeclareTextSymbol\cyraz\LastDeclaredEncoding{"6A}%
\DeclareTextSymbol\CYRIAZ\LastDeclaredEncoding{"4B}%
\DeclareTextSymbol\cyriaz\LastDeclaredEncoding{"6B}%
\DeclareTextSymbol\CYRLYUS\LastDeclaredEncoding{"4C}%
\DeclareTextSymbol\cyrlyus\LastDeclaredEncoding{"6C}%
\DeclareTextSymbol\CYRIOTLYUS\LastDeclaredEncoding{"4D}%
\DeclareTextSymbol\cyriotlyus\LastDeclaredEncoding{"6D}%
\DeclareTextSymbol\CYRGERV\LastDeclaredEncoding{"4E}%
\DeclareTextSymbol\cyrgerv\LastDeclaredEncoding{"6E}%
\DeclareTextSymbol\CYRZEMLA\LastDeclaredEncoding{"50}%
\DeclareTextSymbol\cyrzemla\LastDeclaredEncoding{"70}%
\DeclareTextSymbol\CYRKSI\LastDeclaredEncoding{"51}%
\DeclareTextSymbol\cyrksi\LastDeclaredEncoding{"71}%
\DeclareTextSymbol\CYRVARIZHE\LastDeclaredEncoding{"52}%
\DeclareTextSymbol\cyrvarizhe\LastDeclaredEncoding{"72}%
\DeclareTextSymbol\CYRIZHE\LastDeclaredEncoding{"53}%
\DeclareTextSymbol\cyrizhe\LastDeclaredEncoding{"73}%
\DeclareTextSymbol\CYROMGA\LastDeclaredEncoding{"54}%
\DeclareTextSymbol\cyromga\LastDeclaredEncoding{"74}%
\DeclareTextSymbol\CYROMRND\LastDeclaredEncoding{"55}%
\DeclareTextSymbol\cyromrnd\LastDeclaredEncoding{"75}%
\DeclareTextSymbol\CYROT\LastDeclaredEncoding{"56}%
\DeclareTextSymbol\cyrot\LastDeclaredEncoding{"76}%
\DeclareTextSymbol\CYROMTLO\LastDeclaredEncoding{"57}%
\DeclareTextSymbol\cyromtlo\LastDeclaredEncoding{"77}%
\DeclareTextSymbol\CYRFITA\LastDeclaredEncoding{"58}%
\DeclareTextSymbol\cyrfita\LastDeclaredEncoding{"78}%
\DeclareTextSymbol\CYRKOPPA\LastDeclaredEncoding{"59}%
\DeclareTextSymbol\cyrkoppa\LastDeclaredEncoding{"79}%
\DeclareTextSymbol\CYRUK\LastDeclaredEncoding{"5A}%
\DeclareTextSymbol\cyruk\LastDeclaredEncoding{"7A}%
\DeclareTextSymbol\CYRCHERV\LastDeclaredEncoding{"80}%
\DeclareTextSymbol\cyrcherv\LastDeclaredEncoding{"A0}%
\DeclareTextSymbol\CYRPSI\LastDeclaredEncoding{"81}%
\DeclareTextSymbol\cyrpsi\LastDeclaredEncoding{"A1}%
\DeclareTextSymbol\CYRSHTA\LastDeclaredEncoding{"82}%
\DeclareTextSymbol\cyrshta\LastDeclaredEncoding{"A2}%
```

```
\DeclareTextSymbol\CYRIOTBYUS\LastDeclaredEncoding{"83}%
\DeclareTextSymbol\cyriotbyus\LastDeclaredEncoding{"A3}%
\DeclareTextSymbol\CYRIOTEST\LastDeclaredEncoding{"84}%
\DeclareTextSymbol\cyriotest\LastDeclaredEncoding{"A4}%
\DeclareTextSymbol\CYRNARROWE\LastDeclaredEncoding{"85}%
\DeclareTextSymbol\cyrnarrowe\LastDeclaredEncoding{"A5}%
\DeclareTextSymbol\CYRZELO\LastDeclaredEncoding{"86}%
\DeclareTextSymbol\cyrzelo\LastDeclaredEncoding{"A6}%
\DeclareTextSymbol\CYRVARUK\LastDeclaredEncoding{"87}%
\DeclareTextSymbol\cyrvaruk\LastDeclaredEncoding{"A7}%
\DeclareTextSymbol\CYRVIA\LastDeclaredEncoding{"88}%
\DeclareTextSymbol\cyrvia\LastDeclaredEncoding{"A8}%
\DeclareTextSymbol\CYRVLYUS\LastDeclaredEncoding{"89}%
\DeclareTextSymbol\cyrvlyus\LastDeclaredEncoding{"A9}%
\DeclareTextSymbol\CYRIZHDGR\LastDeclaredEncoding{"8A}%
\DeclareTextSymbol\cyrizhdgr\LastDeclaredEncoding{"AA}%
\DeclareTextSymbol\CYRIZHUML\LastDeclaredEncoding{"8B}%
\DeclareTextSymbol\cyrizhuml\LastDeclaredEncoding{"AB}%
\DeclareTextSymbol\CYROLG\LastDeclaredEncoding{"8C}%
\DeclareTextSymbol\cyrolg\LastDeclaredEncoding{"AC}%
\DeclareTextSymbol\CYROERY\LastDeclaredEncoding{"8D}%
\DeclareTextSymbol\cyroery\LastDeclaredEncoding{"AD}%
\DeclareTextSymbol\CYROHSN\LastDeclaredEncoding{"8E}%
\DeclareTextSymbol\cyrohsn\LastDeclaredEncoding{"AE}%
\DeclareTextSymbol\CYROOCDOT\LastDeclaredEncoding{"8F}%
\DeclareTextSymbol\cyroocdot\LastDeclaredEncoding{"AF}%
\DeclareTextSymbol\CYROOCDDOT\LastDeclaredEncoding{"90}%
\DeclareTextSymbol\cyroocddot\LastDeclaredEncoding{"B0}%
\DeclareTextSymbol\CYRVIZH\LastDeclaredEncoding{"91}%
\DeclareTextSymbol\cyrvizh\LastDeclaredEncoding{"B1}%
\DeclareTextSymbol\CYRPPETER\LastDeclaredEncoding{"92}%
\DeclareTextSymbol\cyrppeter\LastDeclaredEncoding{"B2}%
\DeclareTextSymbol\CYRTPETER\LastDeclaredEncoding{"93}%
\DeclareTextSymbol\cyrtpeter\LastDeclaredEncoding{"B3}%
\DeclareTextSymbol\CYRZELOM\LastDeclaredEncoding{"94}%
\DeclareTextSymbol\cyrzelom\LastDeclaredEncoding{"B4}%
\DeclareTextAccent\F\LastDeclaredEncoding{"00}%
\DeclareTextAccent\C\LastDeclaredEncoding{"01}%
\DeclareTextAccent\U\LastDeclaredEncoding{"02}%
\DeclareTextSymbol\cyrdash\LastDeclaredEncoding{"16}%
\DeclareTextAccent\CYRtitlo\LastDeclaredEncoding{"05}%
\DeclareTextAccent\CYRpalatal\LastDeclaredEncoding{"06}%
\DeclareTextAccent\CYRpaerok\LastDeclaredEncoding{"07}%
\DeclareTextAccent\CYRkamora\LastDeclaredEncoding{"17}%
\DeclareTextAccent\CYRpsili\LastDeclaredEncoding{"1B}%
\DeclareTextAccent\CYRdasia\LastDeclaredEncoding{"1C}%
\DeclareTextAccent\CYRzvat\LastDeclaredEncoding{"1D}%
\DeclareTextAccent\CYRpneuac\LastDeclaredEncoding{"1E}%
\DeclareTextAccent\CYRpneugrav\LastDeclaredEncoding{"1F}%
\DeclareTextAccent\CYRthousands\LastDeclaredEncoding{"9E}%
\DeclareTextAccent\CYRaccte\LastDeclaredEncoding{"08}%
\DeclareTextAccent\CYRtma\LastDeclaredEncoding{"09}%
\DeclareTextAccent\CYRlegion\LastDeclaredEncoding{"0A}%
\DeclareTextAccent\CYRleodr\LastDeclaredEncoding{"0B}%
```

```
\DeclareTextAccent\CYRvran\LastDeclaredEncoding{"0C}%
\DeclareTextAccent\CYRkoloda\LastDeclaredEncoding{"0E}%
\DeclareTextAccent\CYRtmatem\LastDeclaredEncoding{"0F}%
\DeclareTextAccent\CYRvzvat\LastDeclaredEncoding{"10}%
\DeclareTextAccent\CYRvdasia\LastDeclaredEncoding{"11}%
\DeclareTextAccent\CYRvpsili\LastDeclaredEncoding{"12}%
\DeclareTextAccent\CYRvpneuac\LastDeclaredEncoding{"13}%
\DeclareTextAccent\CYRvpneugrav\LastDeclaredEncoding{"14}%
\DeclareTextSymbol\CYRNASH\LastDeclaredEncoding{"4F}%
\DeclareTextSymbol\cyrnash\LastDeclaredEncoding{"6F}%
%
⟨/xsenc.def⟩
```

## 4.41 File xscmr.fd

```
⟨*xscmr.fd⟩
\ProvidesFile{xscmr.fd}
  [Experimental XS cmr]
\providecommand{\EC@family}[5]{%
  \DeclareFontShape{#1}{#2}{#3}{#4}%
  {<5><6><7><8><9><10><10.95><12><14.4>%
   <17.28><20.74><24.88><29.86><35.83>genb*#5}{}}
\DeclareFontFamily{XS}{cmr}{}
\EC@family{XS}{cmr}{m}{n}{rsrm}
\EC@family{XS}{cmr}{m}{sl}{rssl}
\EC@family{XS}{cmr}{m}{it}{rsti}
\EC@family{XS}{cmr}{m}{sc}{rscc}
\EC@family{XS}{cmr}{bx}{n}{rsbx}
\EC@family{XS}{cmr}{b}{n}{rsrb}
\EC@family{XS}{cmr}{bx}{it}{rsbi}
\EC@family{XS}{cmr}{bx}{sl}{rsbl}
\EC@family{XS}{cmr}{bx}{sc}{rsxc}
\EC@family{XS}{cmr}{m}{ui}{rsui}
%
⟨/xscmr.fd⟩
```

## 4.42 File ucshyper.sty

```
⟨*ucshyper.sty⟩
\ProvidesPackage{ucshyper}[2002/03/05
    UCS: Unicode in Hyperref's PDF bookmarks]%
\ifx\pdfoutput\undefined
  \PackageWarning{ucshyper}{ucshyper needs to be run with
    pdflatex.\MessageBreak Disabling functionality}%
  \expandafter\endinput\fi
\RequirePackage[pdftex,unicode]{hyperref}
%
\newif\ifucshyper@prerender\ucshyper@prerendertrue
\newif\ifucshyper@direct\ucshyper@directtrue
\DeclareOption{nodirect}{\ucshyper@directfalse}%
\DeclareOption{direct}{\ucshyper@directtrue}%
\DeclareOption{noprerender}{\ucshyper@prerenderfalse}%
\DeclareOption{prerender}{\ucshyper@prerendertrue}%
\ProcessOptions*%
%
```

```
\newcommand\UCSPU@tmp{}%
\newcommand\UCSPU[1]{%
  \begingroup\let\UCSPU@tmp\relax\relax\ifx\UCSPU@tmp\relax
    \ifx\utf@viii@map\undefined\else
      \expandafter\utf@viii@map\expandafter{\number#1}\fi
    \ifnum#1>"FFFF
      \PackageError{ucshy}{UCSPU does not support codes greater than
        \number"FFFF}\fi
    \@tempcntb#1\divide\@tempcntb by'40000
    \edef\uc@temp@a{\@backslashchar\number\@tempcntb}%
    \multiply\@tempcntb by'40000 \@tempcnta#1\advance\@tempcnta by-\@tempcntb
    \@tempcntb\@tempcnta\divide\@tempcntb by'4000
    \edef\uc@temp@a{\uc@temp@a\number\@tempcntb}%
    \multiply\@tempcntb by'4000\advance\@tempcnta by-\@tempcntb
    \@tempcntb\@tempcnta\divide\@tempcntb by'400
    \edef\uc@temp@a{\uc@temp@a\number\@tempcntb\@backslashchar}%
    \multiply\@tempcntb by'400\advance\@tempcnta by-\@tempcntb
    \@tempcntb\@tempcnta\divide\@tempcntb by'100
    \edef\uc@temp@a{\uc@temp@a\number\@tempcntb}%
    \multiply\@tempcntb by'100\advance\@tempcnta by-\@tempcntb
    \@tempcntb\@tempcnta\divide\@tempcntb by'10
    \edef\uc@temp@a{\uc@temp@a\number\@tempcntb}%
    \multiply\@tempcntb by'10\advance\@tempcnta by-\@tempcntb
    \@tempcntb\@tempcnta
    \expandafter\xdef\csname UCS2PU\number#1\endcsname{%
      \uc@temp@a\number\@tempcntb}%
%  \typeout{UCS2PU: \number#1 -> \uc@temp@a\number\@tempcntb}%
  \fi\endgroup
}
\newcommand\ucspu@err[1]{%
  \csname[*** Insert \string\UCSPU{\number#1}
  into preamble ***]\endcsname}
\@ifundefined{pdfstringdefPreHook}{\let\pdfstringdefPreHook\@empty}{}
\g@addto@macro\pdfstringdefPreHook{%
  \ifucshyper@direct
    \let\old@unichar\unichar
    \def\unichar#1{%
      \expandafter\ifx\csname UCS2PU\number#1\endcsname\relax
        \ucspu@err{#1}\old@unichar{#1}\else
        \csname UCS2PU\number#1\endcsname\fi
      }%
  \fi
  \let\selectfont\empty
  \let\fontencoding\@gobble
  \let\selectlanguage\@gobble
  \let\foreignlanguage\@gobble
  }
\let\ucshyper@old@pdfstringdef\pdfstringdef
\def\pdfstringdef#1#2{%
  \ifucshyper@prerender
    \begingroup
      \let\old@unichar\unichar
      \let\uc@output\@gobbletwo
      \fontencoding{PU}\enc@update
```

```
4417       \def\unichar##1{\old@unichar{##1}\UCSPU{##1}}%
4418       \edef\0{\string\0}%
4419       \edef\1{\string\1}%
4420       \edef\2{\string\2}%
4421       \edef\3{\string\3}%
4422       \edef\8{\string\8}%
4423       \edef\9{\string\9}%
4424       \Hy@pdfstringtrue
4425       \PrerenderUnicode{#2}%
4426     \endgroup
4427   \fi
4428   \ucshyper@old@pdfstringdef{#1}{#2}}
4429 \newcommand\UCSPUrange[2]{%
4430   \count255=#1\relax
4431   \loop\ifnum\count255>#2\relax\else
4432     \UCSPU{\count255}%
4433     \advance\count255 by1\relax
4434   \repeat}
4435 \@onlypreamble\UCSPUrange
4436 %
4437 ⟨/ucshyper.sty⟩
```

# Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

## Symbols


\! . . . . . 711, 727, 739, 747
\" . . . . . 712, 1146, 1151, 1242, 1413, 1417, 1434, 1438, 1986, 2858, 2990, 3609, 3611, 3881
\# . . . . . 695
\$ . . . . . 696, 1979, 2851, 2983
\% . . . . . 697
\& . . . . . 698
\’ . . . . . 713, 1248, 1351, 1368, 1383, 1402, 1406, 1426, 1430, 1449, 1459, 1467, 1477, 1486, 1495, 1500, 1546, 1941, 1988, 2068, 2860, 2992, 3878
\. . . . . 3887
\< . . . . . 1983, 2855, 2987
\= . . . . . 1239, 3886
\> . . . . . 1982, 2854, 2986
\? . . . . . 713
\@ . 13, 705, 948, 1134, 1144, 1150, 3502
\@@input . . . . . 160, 3086, 3087, 3089
\@@textascii . . . . . 1206, 1207
\@backslashchar . . . . . 1152, 1153, 1181, 1184, 4372, 4378
\@eha . . . . . 621, 623, 625, 627, 629, 631
\@empty . . . . . 865, 4395
\@firstofone . . . . . 46, 98, 672, 678
\@firstoftwo . . . 785, 1212, 1654, 3087
\@font@info . . . . . 1719, 1720, 1722, 3575, 3576, 3578
\@font@warning . . . . . 1717, 1718, 1721, 3573, 3574, 3577
\@getcharinfo . 428, 461, 632, 666, 733
\@getcharinfo@ . . . . . 656, 662
\@gobble . . . . . 42, 52, 258, 260, 282, 524, 583, 586, 587, 895, 949, 1019, 1105, 1153, 1699, 3087, 3571, 4406, 4407, 4408
\@gobblefour . . . 45, 297, 328, 355, 382
\@gobblethree . . . . . 44, 596, 600, 602
\@gobbletwo . . . . . 43, 260, 950, 1020, 1651, 4415
\@hfont@enc . . . . . 3628, 3630
\@hfontadapt . . . . . 3615, 3629
\@hfontadapt@ . . . . . 3620, 3635

\@ifnch . . . . . 69, 70, 71
\@ifnextchar . 51, 60, 64, 65, 1617, 1621
\@ifpackageloaded . . . 151, 1728, 1730
\@ifstar . . . . . 583
\@ifundefined . . . . . 3633, 4395
\@inpenc@test . . . . . 1033
\@inpenc@undefined . . . . . 765
\@inpenc@undefined@ . . . . . 764
\@inputcheck . . . . . 82, 85, 86, 87
\@latex@error . . . . . 621, 623, 625, 627, 629, 631
\@let@token . . . . . 53, 61, 69, 72, 75
\@ne . . . . . 416, 417, 546, 547, 560, 562, 577, 690, 737, 743, 855, 858, 875, 888, 1164, 1166, 1167, 1170, 1779, 1894
\@nil . . 286, 291, 322, 353, 380, 652, 659, 662, 851, 962, 971, 972, 978, 979, 980, 989, 990, 991, 1034, 1035, 1111, 1112, 1120, 1206, 1207, 1317, 1318, 3622, 3635
\@nodocument . . . . . 952, 957, 1107
\@onlypreamble . . . . . 4435
\@prerenderunicode . . . . . 583, 584
\@protected@testopt . . . . 52, 118, 152
\@secondoftwo . . 785, 1212, 1656, 3087
\@sptoken . . . . . 72
\@sverb . . . . . 867
\@tabacckludge . 1249, 1331, 1332, 1337
\@tempa . . . 3087, 3104, 3111, 3112, 3117, 3123, 3124, 3126, 3129, 3130
\@tempb . . . . . 3087
\@tempcnta . . . . 19, 25, 31, 47, 683, 688, 689, 690, 828, 829, 830, 832, 834, 835, 839, 842, 844, 855, 856, 857, 858, 1155, 3503, 3507, 3508, 3509, 3516, 3519, 3520, 3521, 3523, 3527, 3528, 3529, 3531, 3536, 3537, 3539, 3541, 4373, 4374, 4376, 4377, 4379, 4380, 4382, 4383, 4385, 4386
\@tempcntb . . . . . 48, 684, 688, 833, 837, 843, 1156, 3504, 3510, 3511, 3512, 3514, 4371, 4372, 4373, 4374, 4375, 4376, 4377, 4378, 4379, 4380, 4381, 4382, 4383, 4384, 4385, 4386, 4388, 4389
\@tempdimb . . . . . 1710, 1712
\@temptokena . . . . . 518, 520, 872, 877, 879, 887, 890
\@testopt . . . . . 49, 50, 52
\@text@composite 1210, 1211, 1213, 1214
\@textascii . . . . . 1205, 1206, 1541
\@textascii@switch . . . . . 1209, 1219, 2115, 2116, 3132, 3697
\@typeset@protect 96, 97, 505, 517, 677
\@uclclist . . . . . 1519, 1521, 1522
\@ucsutils . . . 796, 799, 803, 899, 900
\@ucsutils@section . . . . . 804, 805, 847, 868, 901
\@undefined . . . . . 15, 911
\@unistring . . . . . 870, 882, 888
\@use@text@encoding . . . . . 1209
\@xifnch . . . . . 73
\[ . . . . . 714
\\ . . . . . 113, 114, 115, 277, 699, 800, 803, 861, 892, 1100, 1153, 1975, 2847, 2979
\{ . . . . 277, 702, 1100, 1977, 2849, 2981
\} . . . . 277, 703, 1100, 1978, 2850, 2982
\␣ . . . . . 694
\] . . . . . 715
\^ . . . . . 123, 131, 700, 706, 707, 708, 709, 722, 723, 724, 1145, 1154, 1973, 2845, 2977, 3879
_ . . . . . 701
\‘ 716, 1297, 1346, 1362, 1378, 1394, 1398, 1418, 1422, 1448, 1458, 1466, 1476, 1487, 1494, 1501, 1545, 1987, 2067, 2859, 2991, 3877
\| . . . . . 717, 1976, 2848, 2980
\~ . . . . . 704, 850, 1011, 1042, 1116, 1344, 1356, 1373, 1388, 1410, 1414, 1544, 1593, 1594, 1595, 1596, 1974, 2846, 2978, 3880

### Numbers

\0 . . . . . 1942, 4418
\1 . . . . . 1943, 4419
\2 . . . . . 1944, 4420
\3 . . . . . 1945, 4421
\4 . . . . . 1946
\5 . . . . . 1947
\6 . . . . . 1948
\7 . . . . . 1949
\8 . . . . . 1950, 4422
\9 . . . . . 1951, 4423

### A

\A . . . . . 277, 719, 1100
\a . . . . . 720, 1916
\active . . . . . 849, 1009, 1040
\AddToHook . . . . . 15, 16, 920
\advance . . . . . 195, 197, 201, 690, 829, 835, 842, 843, 844, 858, 975, 976, 984, 986, 987, 996, 998, 1000, 1001,

1030, 1047, 1055, 1056, 1064, 1066, 1068, 1076, 1078, 1081, 1084, 1085, 1115, 1123, 1768, 1769, 1773, 1796, 1797, 1804, 3508, 3511, 3520, 3528, 3537, 4373, 4376, 4379, 4382, 4385, 4433
\aftergroup . . . . . 785, 1129
\AtBeginDocument . . . . . 151, 173, 182, 186, 187, 763, 764, 951, 952, 1106, 1108, 1729, 3608
\AtEndDocument . . . . . 174
\AtEndOfPackage . . . . . 179, 956, 957
\autofe@add@fe . . . . . 1666, 1671, 1678
\autofe@DeclareTextCommand 1610, 1611
\autofe@DeclareTextSymbol . . . . . 1614, 1642, 1644
\autofe@defdef . . . . . 1628, 1633, 1638, 1643, 1647
\autofe@mode . . . . . 1204, 1608, 1628, 1633, 1638, 1643, 1653, 1667, 1668, 1669, 1670
\autofe@options . 1665, 1666, 1667, 1668, 1669, 1670, 1674, 1675, 1677
\autofe@parse@declaretextcommand . . . . . 1611, 1613, 1616
\autofe@parse@declaretextcommand@a . . . . . 1618, 1620
\autofe@parse@declaretextcommand@aa . . . . . 1622, 1626
\autofe@parse@declaretextcommand@ad . . . . . 1623, 1631
\autofe@parse@declaretextcommand@dd . . . . . 1619, 1636
\autofe@ProvideTextCommand . . . . . 1612, 1613, 1628, 1633, 1643

## B

\B . . . . . 277, 1058, 1070, 1087, 1100, 1549, 1550, 1584, 1585
\b . . . . . 1917
\begingroup 231, 255, 276, 495, 558, 576, 585, 633, 850, 927, 969, 1003, 1010, 1017, 1041, 1050, 1057, 1069, 1086, 1099, 1109, 1209, 1648, 3506, 3617, 4365, 4413
\bgroup . . . . . 854

## C

\C 277, 1071, 1088, 1100, 1918, 3891, 4297
\catcode 13, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 718, 721, 725, 727, 739, 747, 804, 849, 902, 948, 1009, 1040, 1117, 1134, 1144, 1145, 1146, 1147, 1148, 1150, 1151, 1154, 1155, 1156, 1157, 1202, 1203, 3502
\char . . . . . 837, 932, 1317, 1318, 1452, 1454, 1456, 1462, 1464, 1470, 1472, 1474, 1480, 1482, 1484, 1490, 1492, 1504, 1506, 1508, 1512, 1514, 1516, 1541, 1643, 1779, 1894, 1990, 1991, 1992, 2046, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2065, 2066, 2067, 2068, 2079, 2080, 2994, 2995, 2996, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3553, 3655, 3658, 3660, 3664, 3666, 3671, 3694, 3695, 3699, 3705, 3707
\ci . . . . . 666, 668
\CJK@@empty 1688, 1717, 1718, 1719, 1720
\CJK@@sub . . . . . 1694, 1721, 1722
\cjk@Cforty . . . . . 1764, 1783, 1785
\cjk@Cfrttw . . . . . 1800, 1898, 1900
\cjk@Cfrttw@ . . . . . 1795, 1805
\CJK@DNP . . . . . 1708, 1725, 1726
\CJK@DNPgen . . . . . 1701, 1723, 1724
\CJK@plane . . . . . 1686, 1689, 1690, 1693, 1702, 1704, 1707, 1709, 1712, 1715, 1733, 1777, 1778, 1785, 1892, 1893, 1900
\CJKresetplane . . . . . 1733
\closein . . . . . 87
combine (option) . . . . . 168
\count . . . . . 192, 193, 195, 196, 197, 198, 199, 200, 201, 202, 204, 220, 221, 222, 537, 538, 649, 650, 651, 948, 964, 967, 970, 973, 974, 975, 976, 981, 982, 983, 984, 985, 986, 987, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1003, 1005, 1007, 1008, 1009, 1011, 1016, 1026, 1029, 1030, 1038, 1039, 1040, 1042, 1046, 1047,

1051, 1055, 1056, 1058, 1062, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1074, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1087, 1088, 1089, 1092, 1112, 1113, 1114, 1115, 1116, 1117, 1122, 1123, 1125, 1126, 1134, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1779, 1796, 1797, 1798, 1803, 1804, 1806, 1894, 4430, 4431, 4432, 4433
\count@ ..... 18, 24, 30, 928, 929, 932
\countdef ..... 634, 730
\csname ..... 47, 48, 101, 102, 104, 105, 107, 108, 110, 139, 140, 141, 142, 143, 144, 155, 158, 253, 270, 288, 292, 295, 299, 300, 301, 305, 323, 326, 330, 331, 332, 336, 357, 358, 359, 363, 384, 385, 386, 390, 412, 413, 415, 433, 436, 503, 539, 543, 545, 560, 562, 577, 599, 601, 611, 612, 613, 615, 616, 798, 946, 947, 1016, 1029, 1062, 1074, 1092, 1135, 1143, 1172, 1181, 1201, 1692, 1695, 1696, 1706, 1714, 1747, 1755, 1763, 1794, 1909, 3101, 3102, 3105, 3107, 3109, 3110, 3114, 3115, 3118, 3120, 3121, 3122, 3127, 3503, 3504, 3544, 3545, 3547, 3562, 3564, 3565, 3567, 3568, 3612, 3613, 3615, 3621, 3625, 4387, 4393, 4400, 4402
\curr@fontshape 1692, 1706, 1714, 3565
\CurrentOption ..... 180, 798, 1671
\CYRA ..... 3755
\cyra ..... 3756
\CYRaccte ..... 4310
\CYRAZ ..... 3833, 4222
\cyraz ..... 3834, 4223
\CYRB ..... 3757
\cyrb ..... 3758
\CYRBYUS ..... 3825, 4212
\cyrbyus ..... 3826, 4213
\CYRC ..... 3799
\cyrc ..... 3800
\CYRCH ..... 3801
\cyrch ..... 3802
\CYRCHERV ..... 3865, 4254
\cyrcherv ..... 3866, 4255
\CYRD ..... 3763
\cyrd ..... 3764
\cyrdash ..... 3893, 4299
\CYRdasia ..... 3907, 4305
\CYRDZE ..... 3821, 4208
\cyrdze ..... 3822, 4209
\CYRE ..... 3765
\cyre ..... 3766
\CYREPS ..... 3831
\cyreps ..... 3832
\CYREREV ..... 3813
\cyrerev ..... 3814
\CYRERY ..... 3809
\cyrery ..... 3810
\CYRF ..... 3795
\cyrf ..... 3796
\CYRFITA ..... 3859, 4248
\cyrfita ..... 3860, 4249
\CYRG ..... 3761
\cyrg ..... 3762
\CYRGERV ..... 3841, 4230
\cyrgerv ..... 3842, 4231
\CYRH ..... 3797
\cyrh ..... 3798
\CYRHRDSN ..... 3807
\cyrhrdsn ..... 3808
\CYRI ..... 3771
\cyri ..... 3772
\CYRIAZ ..... 3835, 4224
\cyriaz ..... 3836, 4225
\CYRIE ..... 3829, 4220
\cyrie ..... 3830, 4221
\CYRII ..... 4204
\cyrii ..... 4205
\CYRIOTBYUS ..... 3871, 4260
\cyriotbyus ..... 3872, 4261
\CYRIOTEST ..... 3873, 4262
\cyriotest ..... 3874, 4263
\CYRIOTLYUS ..... 3839, 4228
\cyriotlyus ..... 3840, 4229
\CYRISHRT ..... 3773
\cyrishrt ..... 3774
\CYRIZH ..... 3827, 4214
\cyrizh ..... 3828, 4215
\CYRIZHDGR ..... 4274
\cyrizhdgr ..... 4275
\CYRIZHE ..... 3849, 4238
\cyrizhe ..... 3850, 4239
\CYRIZHUML ..... 4276
\cyrizhuml ..... 4277
\CYRJE ..... 4206
\cyrje ..... 4207
\CYRK ..... 3775
\cyrk ..... 3776
\CYRkamora ..... 3905, 4303
\CYRkoloda ..... 4315

\CYRKOPPA . . . . . 3861, 4250
\cyrkoppa . . . . . 3862, 4251
\CYRKSI . . . . . 3845, 4234
\cyrksi . . . . . 3846, 4235
\CYRL . . . . . 3777
\cyrl . . . . . 3778
\cyrlangle . . . . . 3888
\CYRlegion . . . . . 4312
\CYRleodr . . . . . 4313
\CYRLYUS . . . . . 3837, 4226
\cyrlyus . . . . . 3838, 4227
\CYRM . . . . . 3779
\cyrm . . . . . 3780
\CYRN . . . . . 3781
\cyrn . . . . . 3782
\CYRNARROWE . . . . . 3875, 4264
\cyrnarrowe . . . . . 3876, 4265
\CYRNASH . . . . . 3912, 4322
\cyrnash . . . . . 3913, 4323
\CYRNG . . . . . 4218
\cyrng . . . . . 4219
\CYRNo . . . . . 3897
\CYRO . . . . . 3783
\cyro . . . . . 3784
\CYROERY . . . . . 4280
\cyroery . . . . . 4281
\CYROHSN . . . . . 4282
\cyrohsn . . . . . 4283
\CYROLG . . . . . 4278
\cyrolg . . . . . 4279
\CYROMGA . . . . . 3851, 4240
\cyromga . . . . . 3852, 4241
\CYROMRND . . . . . 3853, 4242
\cyromrnd . . . . . 3854, 4243
\CYROMTLO . . . . . 3857, 4246
\cyromtlo . . . . . 3858, 4247
\CYROOCDDOT . . . . . 4286
\cyroocddot . . . . . 4287
\CYROOCDOT . . . . . 4284
\cyroocdot . . . . . 4285
\CYROT . . . . . 3855, 4244
\cyrot . . . . . 3856, 4245
\CYRP . . . . . 3785
\cyrp . . . . . 3786
\CYRpaerok . . . . . 3904, 4302
\CYRpalatal . . . . . 3903, 4301
\CYRpneuac . . . . . 3909, 4307
\CYRpneugrav . . . . . 3910, 4308
\CYRPPETER . . . . . 4290
\cyrppeter . . . . . 4291
\CYRPSI . . . . . 3867, 4256
\cyrpsi . . . . . 3868, 4257
\CYRpsili . . . . . 3906, 4304
\CYRR . . . . . 3787
\cyrr . . . . . 3788
\cyrrangle . . . . . 3889
\CYRS . . . . . 3789
\cyrs . . . . . 3790
\CYRSFTSN . . . . . 3811
\cyrsftsn . . . . . 3812
\CYRSH . . . . . 3803
\cyrsh . . . . . 3804
\CYRSHCH . . . . . 3805
\cyrshch . . . . . 3806
\CYRSHTA . . . . . 3869, 4258
\cyrshta . . . . . 3870, 4259
\CYRT . . . . . 3791
\cyrt . . . . . 3792
\CYRthousands . . . . . 3911, 4309
\CYRtitlo . . . . . 3902, 4300
\CYRtma . . . . . 4311
\CYRtmatem . . . . . 4316
\CYRTPETER . . . . . 4292
\cyrtpeter . . . . . 4293
\CYRU . . . . . 3793
\cyru . . . . . 3794
\CYRUK . . . . . 3863, 4252
\cyruk . . . . . 3864, 4253
\CYRV . . . . . 3759
\cyrv . . . . . 3760
\CYRVARIZHE . . . . . 3847, 4236
\cyrvarizhe . . . . . 3848, 4237
\CYRVARUK . . . . . 4268
\cyrvaruk . . . . . 4269
\CYRvdasia . . . . . 4318
\CYRVIA . . . . . 4270
\cyrvia . . . . . 4271
\CYRVIZH . . . . . 4288
\cyrvizh . . . . . 4289
\CYRVLYUS . . . . . 4272
\cyrvlyus . . . . . 4273
\CYRvpneuac . . . . . 4320
\CYRvpneugrav . . . . . 4321
\CYRvpsili . . . . . 4319
\CYRvran . . . . . 4314
\CYRvzvat . . . . . 4317
\CYRYA . . . . . 3817
\cyrya . . . . . 3818
\CYRYAT . . . . . 3823, 4210
\cyryat . . . . . 3824, 4211
\CYRYI . . . . . 4216
\cyryi . . . . . 4217
\CYRYO . . . . . 3819
\cyryo . . . . . 3820
\CYRYU . . . . . 3815
\cyryu . . . . . 3816
\CYRZ . . . . . 3769
\cyrz . . . . . 3770

\CYRZELO . . . . . 4266
\cyrzelo . . . . . 4267
\CYRZELOM . . . . . 4294
\cyrzelom . . . . . 4295
\CYRZEMLA . . . . . 3843, 4232
\cyrzemla . . . . . 3844, 4233
\CYRZH . . . . . 3767
\cyrzh . . . . . 3768
\CYRzvat . . . . . 3908, 4306

## D

\D . . . . . 1089, 1919
\dagesh 3681, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708
\dec . . . . . 218, 224
\DeclareFontEncoding . . . . . 1744, 1752, 1760, 1791, 1906, 1914, 1964, 2111, 2113, 2836, 2966, 3084, 3387, 3558, 3642, 3753, 4202
\DeclareFontFamily 1956, 2098, 2104, 2811, 2812, 2819, 2820, 2827, 2828, 2953, 2959, 3078, 3334, 3484, 3490, 3496, 3594, 3600, 3714, 3725, 3735, 3742, 3923, 4333
\DeclareFontShape 1957, 1958, 2099, 2105, 2813, 2814, 2821, 2822, 2829, 2830, 2954, 2960, 3079, 3080, 3335, 3339, 3348, 3350, 3363, 3365, 3370, 3375, 3377, 3379, 3381, 3485, 3491, 3497, 3595, 3601, 3715, 3716, 3717, 3718, 3719, 3726, 3727, 3728, 3729, 3736, 3743, 3744, 3920, 4330
\DeclareFontSubstitution . . . 1745, 1753, 1761, 1792, 1907, 1915, 1965, 2112, 2114, 2837, 2967, 3085, 3388, 3559, 3643, 3754, 4203
\DeclareOption . . . . 177, 178, 179, 180, 793, 797, 1667, 1668, 1669, 1670, 1671, 4357, 4358, 4359, 4360
\DeclareRobustCommand . . . . . 851, 885
\DeclareSizeFunction . . . . . . 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 3573, 3574, 3575, 3576, 3577, 3578
\DeclareTextAccent . . . 1167, 1238, 1239, 1240, 1242, 1243, 1245, 1248, 1261, 1263, 1265, 1268, 1287, 1293, 1295, 1296, 1297, 1344, 1599, 3877, 3878, 3879, 3880, 3881, 3882, 3883, 3884, 3885, 3886, 3887, 3890, 3891, 3892, 3902, 3903, 3904, 3905, 3906, 3907, 3908, 3909, 3910, 3911, 4296, 4297, 4298, 4300, 4301, 4302, 4303, 4304, 4305, 4306, 4307, 4308, 4309, 4310, 4311, 4312, 4313, 4314, 4315, 4316, 4317, 4318, 4319, 4320, 4321
\DeclareTextCommand . . . . . 1166, 1219, 1244, 1249, 1318, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1541, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1610, 1611, 1783, 1898, 1990, 1991, 1992, 2046, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2065, 2066, 2067, 2068, 2079, 2080, 2115, 2116, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408,

2410, 2412, 2414, 2416, 2418,
2420, 2422, 2424, 2426, 2428,
2430, 2432, 2434, 2436, 2438,
2440, 2442, 2444, 2446, 2448,
2450, 2452, 2454, 2456, 2458,
2460, 2462, 2464, 2466, 2468,
2470, 2472, 2474, 2476, 2478,
2480, 2482, 2484, 2486, 2488,
2490, 2492, 2494, 2496, 2498,
2500, 2502, 2504, 2506, 2508,
2510, 2512, 2514, 2516, 2518,
2520, 2522, 2524, 2526, 2528,
2530, 2532, 2534, 2536, 2538,
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2590, 2592, 2594, 2596, 2598,
2600, 2602, 2604, 2606, 2608,
2610, 2612, 2614, 2616, 2618,
2620, 2622, 2624, 2626, 2628,
2630, 2632, 2634, 2636, 2638,
2640, 2642, 2644, 2646, 2648,
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2670, 2672, 2674, 2676, 2678,
2680, 2682, 2684, 2686, 2688,
2690, 2692, 2694, 2696, 2698,
2700, 2702, 2704, 2706, 2708,
2710, 2712, 2714, 2716, 2718,
2720, 2722, 2724, 2726, 2728,
2730, 2732, 2734, 2736, 2738,
2740, 2742, 2744, 2746, 2748,
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2770, 2772, 2774, 2776, 2778,
2780, 2782, 2784, 2786, 2788,
2790, 2792, 2794, 2796, 2798,
2800, 2802, 2804, 2806, 2968,
2969, 2994, 2995, 2996, 3046,
3047, 3048, 3049, 3050, 3051,
3052, 3053, 3054, 3055, 3056,
3057, 3058, 3059, 3060, 3061,
3093, 3098, 3105, 3118, 3121,
3127, 3132, 3133, 3134, 3135,
3136, 3137, 3138, 3139, 3141,
3143, 3145, 3147, 3149, 3151,
3153, 3155, 3157, 3159, 3161,
3163, 3165, 3167, 3169, 3171,
3173, 3175, 3177, 3179, 3181,
3183, 3185, 3187, 3189, 3191,
3193, 3195, 3197, 3199, 3201,
3203, 3205, 3207, 3209, 3211,
3213, 3215, 3256, 3257, 3258,
3259, 3260, 3261, 3262, 3263,
3264, 3265, 3266, 3267, 3268,
3269, 3270, 3271, 3272, 3273,
3274, 3275, 3276, 3277, 3278,
3279, 3280, 3281, 3282, 3283,
3284, 3285, 3286, 3287, 3305,
3306, 3307, 3308, 3309, 3310,
3311, 3312, 3313, 3314, 3459,
3460, 3461, 3462, 3463, 3464,
3465, 3466, 3467, 3468, 3469,
3470, 3471, 3472, 3473, 3474,
3475, 3476, 3477, 3478, 3581,
3582, 3645, 3646, 3647, 3648,
3649, 3650, 3651, 3652, 3653,
3654, 3655, 3656, 3657, 3658,
3659, 3660, 3661, 3662, 3663,
3664, 3665, 3666, 3667, 3668,
3669, 3670, 3671, 3675, 3676,
3681, 3682, 3683, 3684, 3685,
3686, 3687, 3688, 3689, 3690,
3691, 3692, 3693, 3694, 3695, 3697

`\DeclareTextCommandDefault` 1784, 1899

`\DeclareTextComposite` 1165, 1340,
1341, 1342, 1346, 1347, 1348,
1349, 1351, 1352, 1353, 1354,
1356, 1357, 1358, 1362, 1363,
1364, 1368, 1369, 1370, 1371,
1373, 1374, 1375, 1376, 1378,
1379, 1380, 1381, 1383, 1384,
1385, 1386, 1388, 1389, 1390,
1394, 1395, 1396, 1397, 1398,
1399, 1400, 1401, 1402, 1403,
1404, 1405, 1406, 1407, 1408,
1409, 1410, 1411, 1412, 1413,
1414, 1415, 1416, 1417, 1418,
1419, 1420, 1421, 1422, 1423,
1424, 1425, 1426, 1427, 1428,
1429, 1430, 1431, 1432, 1433,
1434, 1435, 1436, 1437, 1438,
1439, 1440, 1441, 1443, 1444, 3698

`\DeclareTextCompositeCommand` . . .
. . . . . 1168, 1448,
1449, 1450, 1451, 1452, 1453,
1454, 1455, 1456, 1457, 1458,
1459, 1460, 1461, 1462, 1463,
1464, 1465, 1466, 1467, 1468,
1469, 1470, 1471, 1472, 1473,
1474, 1475, 1476, 1477, 1478,
1479, 1480, 1481, 1482, 1483,
1484, 1485, 1486, 1487, 1488,
1489, 1490, 1491, 1492, 1493,
1494, 1495, 1496, 1497, 1498,
1499, 1500, 1501, 1502, 1503,

1504, 1505, 1506, 1507, 1508,
1509, 1510, 1511, 1512, 1513,
1514, 1515, 1516, 1517, 1518,
1544, 1545, 1546, 1593, 1594,
1595, 1596, 3108, 3142, 3144,
3146, 3148, 3150, 3152, 3154,
3156, 3158, 3160, 3162, 3164,
3166, 3168, 3170, 3172, 3174,
3176, 3178, 3180, 3182, 3184,
3186, 3188, 3190, 3192, 3194,
3196, 3198, 3200, 3202, 3204,
3206, 3208, 3210, 3212, 3214,
3216, 3699, 3700, 3701, 3702,
3703, 3704, 3705, 3706, 3707, 3708

\DeclareTextSymbol 1164, 1220, 1221,
1222, 1223, 1224, 1225, 1229,
1230, 1232, 1233, 1235, 1236,
1237, 1246, 1247, 1250, 1251,
1260, 1264, 1266, 1267, 1269,
1270, 1271, 1272, 1273, 1274,
1275, 1276, 1277, 1278, 1279,
1280, 1281, 1282, 1283, 1284,
1285, 1286, 1288, 1289, 1290,
1291, 1298, 1299, 1300, 1301,
1302, 1303, 1304, 1305, 1306,
1307, 1308, 1309, 1310, 1311,
1312, 1313, 1314, 1315, 1316,
1319, 1320, 1322, 1323, 1324,
1325, 1326, 1343, 1345, 1359,
1391, 1446, 1447, 1540, 1597,
1598, 1614, 1641, 1916, 1917,
1918, 1919, 1920, 1921, 1922,
1923, 1924, 1925, 1926, 1927,
1928, 1929, 1930, 1931, 1932,
1933, 1934, 1935, 1936, 1937,
1938, 1939, 1940, 1941, 1942,
1943, 1944, 1945, 1946, 1947,
1948, 1949, 1950, 1951, 1966,
1967, 1968, 1969, 1970, 1971,
1972, 1973, 1974, 1975, 1976,
1977, 1978, 1979, 1980, 1981,
1982, 1983, 1984, 1985, 1986,
1987, 1988, 1989, 1993, 1994,
1995, 1996, 1997, 1998, 1999,
2000, 2001, 2002, 2003, 2004,
2005, 2006, 2007, 2008, 2009,
2010, 2011, 2012, 2013, 2014,
2015, 2016, 2017, 2018, 2019,
2020, 2021, 2022, 2023, 2024,
2025, 2026, 2027, 2028, 2029,
2030, 2031, 2032, 2033, 2034,
2035, 2036, 2037, 2038, 2039,
2040, 2041, 2042, 2043, 2044,
2045, 2047, 2064, 2069, 2070,
2071, 2072, 2073, 2074, 2075,
2076, 2077, 2078, 2081, 2082,
2083, 2084, 2085, 2086, 2087,
2088, 2089, 2090, 2091, 2092,
2093, 2117, 2119, 2121, 2123,
2125, 2127, 2129, 2131, 2133,
2135, 2137, 2139, 2141, 2143,
2145, 2147, 2149, 2151, 2153,
2155, 2157, 2159, 2161, 2163,
2165, 2167, 2169, 2171, 2173,
2175, 2177, 2179, 2181, 2183,
2185, 2187, 2189, 2191, 2193,
2195, 2197, 2199, 2201, 2203,
2205, 2207, 2209, 2211, 2213,
2215, 2217, 2219, 2221, 2223,
2225, 2227, 2229, 2231, 2233,
2235, 2237, 2239, 2241, 2243,
2245, 2247, 2249, 2251, 2253,
2255, 2257, 2259, 2261, 2263,
2265, 2267, 2269, 2271, 2273,
2275, 2277, 2279, 2281, 2283,
2285, 2287, 2289, 2291, 2293,
2295, 2297, 2299, 2301, 2303,
2305, 2307, 2309, 2311, 2313,
2315, 2317, 2319, 2321, 2323,
2325, 2327, 2329, 2331, 2333,
2335, 2337, 2339, 2341, 2343,
2345, 2347, 2349, 2351, 2353,
2355, 2357, 2359, 2361, 2363,
2365, 2367, 2369, 2371, 2373,
2375, 2377, 2379, 2381, 2383,
2385, 2387, 2389, 2391, 2393,
2395, 2397, 2399, 2401, 2403,
2405, 2407, 2409, 2411, 2413,
2415, 2417, 2419, 2421, 2423,
2425, 2427, 2429, 2431, 2433,
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2465, 2467, 2469, 2471, 2473,
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2515, 2517, 2519, 2521, 2523,
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2595, 2597, 2599, 2601, 2603,
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2615, 2617, 2619, 2621, 2623,
2625, 2627, 2629, 2631, 2633,
2635, 2637, 2639, 2641, 2643,
2645, 2647, 2649, 2651, 2653,
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2685, 2687, 2689, 2691, 2693,
2695, 2697, 2699, 2701, 2703,
2705, 2707, 2709, 2711, 2713,
2715, 2717, 2719, 2721, 2723,
2725, 2727, 2729, 2731, 2733,
2735, 2737, 2739, 2741, 2743,
2745, 2747, 2749, 2751, 2753,
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2795, 2797, 2799, 2801, 2803,
2805, 2838, 2839, 2840, 2841,
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2862, 2863, 2864, 2865, 2866,
2867, 2868, 2869, 2870, 2871,
2872, 2873, 2874, 2875, 2876,
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2887, 2888, 2889, 2890, 2891,
2892, 2893, 2894, 2895, 2896,
2897, 2898, 2899, 2900, 2901,
2902, 2903, 2904, 2905, 2906,
2907, 2908, 2909, 2910, 2911,
2912, 2913, 2914, 2915, 2916,
2917, 2918, 2919, 2920, 2921,
2922, 2923, 2924, 2925, 2926,
2927, 2928, 2929, 2930, 2931,
2932, 2933, 2934, 2935, 2936,
2937, 2938, 2939, 2940, 2941,
2942, 2943, 2944, 2945, 2946,
2947, 2948, 2970, 2971, 2972,
2973, 2974, 2975, 2976, 2977,
2978, 2979, 2980, 2981, 2982,
2983, 2984, 2985, 2986, 2987,
2988, 2989, 2990, 2991, 2992,
2993, 2997, 2998, 2999, 3000,
3001, 3002, 3003, 3004, 3005,
3006, 3007, 3008, 3009, 3010,
3011, 3012, 3013, 3014, 3015,
3016, 3017, 3018, 3019, 3020,
3021, 3022, 3023, 3024, 3025,
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3031, 3032, 3033, 3034, 3035,
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3041, 3042, 3043, 3044, 3045,
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3072, 3073, 3389, 3390, 3391,
3392, 3393, 3394, 3395, 3396,
3397, 3398, 3399, 3400, 3401,
3402, 3403, 3404, 3405, 3406,
3407, 3408, 3409, 3410, 3411,
3412, 3413, 3414, 3415, 3416,
3417, 3418, 3419, 3420, 3421,
3422, 3423, 3424, 3425, 3426,
3427, 3428, 3429, 3430, 3431,
3432, 3433, 3434, 3435, 3436,
3437, 3438, 3439, 3440, 3441,
3442, 3443, 3444, 3445, 3446,
3449, 3450, 3451, 3452, 3453,
3454, 3455, 3456, 3457, 3458,
3672, 3673, 3674, 3677, 3678,
3679, 3755, 3756, 3757, 3758,
3759, 3760, 3761, 3762, 3763,
3764, 3765, 3766, 3767, 3768,
3769, 3770, 3771, 3772, 3773,
3774, 3775, 3776, 3777, 3778,
3779, 3780, 3781, 3782, 3783,
3784, 3785, 3786, 3787, 3788,
3789, 3790, 3791, 3792, 3793,
3794, 3795, 3796, 3797, 3798,
3799, 3800, 3801, 3802, 3803,
3804, 3805, 3806, 3807, 3808,
3809, 3810, 3811, 3812, 3813,
3814, 3815, 3816, 3817, 3818,
3819, 3820, 3821, 3822, 3823,
3824, 3825, 3826, 3827, 3828,
3829, 3830, 3831, 3832, 3833,
3834, 3835, 3836, 3837, 3838,
3839, 3840, 3841, 3842, 3843,
3844, 3845, 3846, 3847, 3848,
3849, 3850, 3851, 3852, 3853,
3854, 3855, 3856, 3857, 3858,
3859, 3860, 3861, 3862, 3863,
3864, 3865, 3866, 3867, 3868,
3869, 3870, 3871, 3872, 3873,
3874, 3875, 3876, 3888, 3889,
3893, 3894, 3895, 3896, 3897,
3898, 3899, 3900, 3901, 3912,
3913, 4204, 4205, 4206, 4207,
4208, 4209, 4210, 4211, 4212,
4213, 4214, 4215, 4216, 4217,
4218, 4219, 4220, 4221, 4222,
4223, 4224, 4225, 4226, 4227,
4228, 4229, 4230, 4231, 4232,
4233, 4234, 4235, 4236, 4237,
4238, 4239, 4240, 4241, 4242,

4243, 4244, 4245, 4246, 4247, 4248, 4249, 4250, 4251, 4252, 4253, 4254, 4255, 4256, 4257, 4258, 4259, 4260, 4261, 4262, 4263, 4264, 4265, 4266, 4267, 4268, 4269, 4270, 4271, 4272, 4273, 4274, 4275, 4276, 4277, 4278, 4279, 4280, 4281, 4282, 4283, 4284, 4285, 4286, 4287, 4288, 4289, 4290, 4291, 4292, 4293, 4294, 4295, 4299, 4322, 4323
\DeclareUnicodeCharacter . . . 588, 754
\DeclareUnicodeCharacterAsOptional . . . . . 589, 590, 838
\DeclareUnicodeOption . . . . . 99, 161, 162, 163, 164, 165, 167
\DeclareUnicodeOption@ . . . . 118, 119
\def . . . . . 17, 20, 21, 26, 27, 32, 33, 42, 43, 44, 45, 46, 50, 52, 65, 67, 68, 71, 84, 86, 87, 92, 97, 99, 100, 102, 105, 108, 110, 117, 123, 131, 137, 139, 141, 142, 150, 172, 176, 178, 191, 207, 216, 218, 455, 491, 492, 503, 512, 564, 610, 613, 635, 636, 639, 642, 647, 662, 667, 671, 674, 677, 682, 687, 710, 718, 721, 762, 764, 783, 784, 803, 804, 807, 809, 810, 812, 813, 814, 818, 820, 848, 863, 869, 870, 892, 926, 939, 949, 950, 959, 962, 968, 1006, 1032, 1049, 1104, 1110, 1158, 1160, 1163, 1171, 1180, 1189, 1191, 1193, 1201, 1206, 1207, 1208, 1209, 1211, 1317, 1520, 1521, 1539, 1611, 1613, 1616, 1620, 1626, 1631, 1636, 1641, 1647, 1649, 1665, 1666, 1688, 1689, 1694, 1701, 1702, 1708, 1709, 1733, 1764, 1778, 1795, 1797, 1800, 1893, 3087, 3505, 3543, 3548, 3613, 3628, 3629, 4399, 4411, 4417
default (option) . . . . . 166
\define@key . . . 809, 810, 811, 813, 814
\definition . . . 750, 752, 753, 754, 756
\divide . . . . . 199, 204, 221, 537, 649, 1051, 1065, 1067, 1077, 1079, 1080, 1082, 1771, 1774, 3507, 3509, 3510, 3512, 3519, 3521, 3527, 3529, 3536, 4371, 4374, 4377, 4380, 4383
document (option) . . . . . 164
\doublevav . . . . . 3672
\doubleyod . . . . . 3674, 3698
\dteightCODE . . . . . 3313, 3323
\dtfiveCODE . . . . . 3310, 3320
\dtfourCODE . . . . . 3309, 3319
\dtnineCODE . . . . . 3314, 3324
\dtoneCODE . . . . . 3306, 3316
\dtsevenCODE . . . . . 3312, 3322
\dtsixCODE . . . . . 3311, 3321
\dtthreeCODE . . . . . 3308, 3318
\dttwoCODE . . . . . 3307, 3317
\dtzeroCODE . . . . . 3305, 3315

## E

\e . . . . . 1920
\EC@family . . . . . 3919, 3924, 3925, 3926, 3927, 3928, 3929, 3930, 3931, 3932, 3933, 4329, 4334, 4335, 4336, 4337, 4338, 4339, 4340, 4341, 4342, 4343
\edef . . . . . 114, 154, 223, 224, 231, 496, 538, 614, 650, 754, 798, 825, 826, 830, 836, 850, 932, 1015, 1045, 1143, 1153, 1690, 1703, 1711, 1776, 1777, 1892, 3104, 3117, 3126, 3562, 3564, 3619, 3623, 3631, 3635, 4372, 4375, 4378, 4381, 4384, 4418, 4419, 4420, 4421, 4422, 4423
\egroup . . . . . 865
\else 2, 5, 6, 15, 74, 77, 87, 98, 112, 125, 133, 144, 157, 160, 171, 173, 177, 185, 206, 246, 266, 272, 282, 294, 298, 304, 309, 315, 325, 329, 335, 340, 346, 356, 362, 367, 373, 383, 389, 394, 400, 421, 427, 438, 443, 446, 450, 454, 459, 479, 494, 497, 511, 513, 526, 533, 539, 551, 557, 561, 595, 600, 601, 608, 640, 655, 688, 732, 738, 745, 763, 785, 793, 804, 851, 874, 875, 878, 908, 931, 946, 951, 952, 956, 957, 966, 977, 988, 1027, 1054, 1063, 1075, 1093, 1105, 1106, 1107, 1112, 1121, 1125, 1140, 1174, 1183, 1192, 1203, 1204, 1207, 1212, 1519, 1541, 1628, 1633, 1638, 1643, 1652, 1655, 1689, 1693, 1698, 1702, 1707, 1709, 1715, 1777, 1797, 1890, 1892, 3087, 3549, 3551, 3570, 4366, 4401, 4431
\empty . 170, 190, 191, 259, 260, 407, 410, 497, 796, 869, 963, 972,

979, 980, 989, 990, 991, 1019, 1020, 1206, 1207, 1534, 3094, 4405
\empty@sfcnt . . . . . 1691, 3563
\enc@update . . . . . 4416
\encodingdefault . . . . . 1208
\endcsname . . . . . 47, 48, 101, 103, 104, 106, 107, 108, 110, 139, 140, 141, 142, 143, 144, 155, 158, 253, 270, 288, 292, 295, 299, 300, 301, 305, 323, 326, 330, 331, 332, 336, 357, 358, 359, 363, 384, 385, 386, 390, 412, 414, 416, 433, 436, 503, 539, 544, 546, 560, 562, 577, 599, 601, 611, 612, 613, 615, 616, 798, 946, 947, 1016, 1029, 1062, 1074, 1092, 1135, 1143, 1172, 1181, 1201, 1693, 1695, 1696, 1707, 1715, 1747, 1755, 1763, 1794, 1909, 3101, 3102, 3106, 3107, 3109, 3110, 3114, 3115, 3119, 3120, 3121, 3122, 3127, 3503, 3504, 3544, 3545, 3547, 3562, 3564, 3565, 3567, 3568, 3612, 3613, 3615, 3621, 3625, 4387, 4394, 4400, 4402
\endgroup . 236, 262, 280, 500, 570, 581, 587, 661, 850, 935, 1003, 1004, 1014, 1022, 1044, 1060, 1073, 1091, 1097, 1103, 1131, 1209, 1659, 3540, 3626, 4390, 4426
\endinput . . . . 9, 943, 947, 3554, 4352
\endlinechar . . . . . 681
\errhelp . . . . . 124
\errmessage . . . . . 124, 1197
\escapechar . . . . . 3618
\expandafter . . . . . 9, 21, 27, 33, 52, 98, 101, 102, 103, 104, 105, 106, 107, 108, 110, 139, 141, 142, 155, 238, 253, 262, 268, 269, 285, 288, 292, 297, 302, 306, 307, 310, 311, 316, 323, 328, 333, 337, 338, 341, 342, 347, 355, 360, 364, 365, 368, 369, 374, 382, 387, 391, 392, 395, 396, 401, 413, 415, 445, 480, 481, 483, 484, 485, 486, 487, 488, 489, 518, 519, 520, 522, 523, 524, 525, 529, 539, 543, 545, 560, 562, 566, 577, 599, 601, 609, 610, 612, 613, 614, 648, 652, 656, 657, 658, 659, 691, 730, 731, 753, 756, 799, 800, 838, 839, 840, 841, 869, 872, 877, 879, 882, 895, 934, 943, 946, 947, 952, 972, 979, 980, 989, 990, 991, 1003, 1004, 1005, 1016, 1022, 1028, 1062, 1074, 1092, 1110, 1119, 1143, 1153, 1172, 1173, 1176, 1181, 1182, 1185, 1191, 1193, 1201, 1206, 1212, 1318, 1521, 1628, 1633, 1638, 1643, 1659, 1671, 1695, 1696, 1747, 1755, 1763, 1781, 1794, 1805, 1896, 1909, 3087, 3101, 3102, 3105, 3107, 3109, 3110, 3111, 3114, 3115, 3118, 3120, 3121, 3122, 3123, 3127, 3129, 3540, 3541, 3544, 3545, 3567, 3568, 3612, 3613, 3615, 3621, 3625, 3634, 3635, 3637, 4352, 4367, 4387, 4400
\external@font . 1702, 1703, 1709, 1711

## F

\F . . . . . 3890, 4296
\f@encoding . . . . 1687, 3562, 3564, 3630
\f@family . . . . . 1318, 3631
\f@series . . . . . 3631
\f@shape . . . . . 3631
\f@size . . . . . 1692, 1695, 1696, 1704, 1706, 1710, 1714, 3565, 3567, 3568, 3624, 3631, 3632
fasterrors (option) . . . . . 160
\fi . . . . . 4, 8, 10, 40, 42, 43, 44, 45, 46, 47, 48, 51, 52, 69, 79, 80, 81, 82, 88, 90, 94, 95, 96, 98, 112, 127, 135, 149, 159, 160, 171, 174, 181, 186, 187, 197, 203, 208, 216, 218, 247, 271, 274, 283, 296, 313, 314, 317, 318, 327, 344, 345, 348, 349, 371, 372, 375, 376, 398, 399, 402, 403, 426, 437, 440, 452, 453, 455, 456, 459, 478, 481, 500, 501, 512, 514, 530, 534, 540, 556, 563, 573, 596, 597, 602, 604, 609, 611, 613, 644, 648, 660, 692, 732, 737, 745, 746, 785, 787, 788, 796, 802, 803, 804, 815, 824, 831, 853, 873, 880, 881, 883, 898, 933, 944, 945, 947, 949, 950, 952, 954, 955, 957, 958, 967, 973, 981, 982, 992, 993, 994, 1002, 1029, 1096, 1105, 1112, 1115, 1122, 1130, 1132, 1133, 1142, 1153, 1162, 1163, 1164, 1165,

1166, 1167, 1168, 1169, 1177, 1178, 1186, 1187, 1194, 1195, 1199, 1203, 1204, 1207, 1212, 1317, 1536, 1541, 1628, 1633, 1638, 1643, 1657, 1658, 1690, 1693, 1700, 1704, 1707, 1712, 1715, 1776, 1778, 1797, 1891, 1893, 3087, 3094, 3095, 3096, 3097, 3098, 3103, 3116, 3503, 3504, 3515, 3517, 3524, 3532, 3534, 3535, 3546, 3551, 3552, 3554, 3572, 3613, 3638, 4352, 4367, 4370, 4390, 4402, 4404, 4427
\finalkaf . . . . . 3699
\finalmem . . . . . 3701
\finalnun . . . . . 3703
\finalpe . . . . . 3705
\finaltsadi . . . . . 3707
\font . . . . . 3545, 3634, 3635
\font@name . . . . 1692, 1705, 1713, 3565
\fontencoding . . . . . 250, 1661, 1662, 1784, 1899, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428, 2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450, 2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472, 2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494, 2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516, 2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538, 2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560, 2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582, 2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604, 2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626, 2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648, 2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670, 2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692, 2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714, 2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736, 2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758, 2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780, 2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802, 2804, 2806, 4406, 4416
\foreignlanguage . . . . . 4408
\futurelet . . . . . 69, 869, 882

## G

\G . . . . . 1921
\g@addto@macro . . . . . 799, 1666, 1667, 1668, 1669, 1670, 3615, 4396
\gdef . . . . . 192, 662, 1062, 1074, 1092, 1686, 1696, 3568, 3580, 3620
\geresh . . . . . 3677
\gershayim . . . . . 3678
\global . . . 139, 142, 415, 455, 478, 482, 483, 490, 510, 512, 529, 545, 562, 567, 577, 603, 635, 639, 642, 752, 781, 803, 865, 897
graphics (option) . . . . . 162

\guillemotleft . . . . . 1326, 1966, 2838, 2970, 3900
\guillemotright . . . . . 1343, 1967, 2839, 2971, 3901
\guilsinglleft . . . . . 1968, 2840, 2972
\guilsinglright . . . . 1969, 2841, 2973

## H

\H . . . . . 1922, 3882
\hatafpatah . . . . . 3684
\hatafqamats . . . . . 3685
\hatafsegol . . . . . 3683
\hbox . . . . . 230, 587
\hebalef . . . . . 3645
\hebaleflamed . . . . . 3679
\hebayin . . . . . 3663
\hebbet . . . . . 3646
\hebdalet . . . . . 3648
\hebfinalkaf . . . . . 3655
\hebfinalmem . . . . . 3658
\hebfinalnun . . . . . 3660
\hebfinalpe . . . . . 3664
\hebfinaltsadi . . . . . 3666
\hebgimel . . . . . 3647
\hebhe . . . . . 3649
\hebhet . . . . . 3652
\hebkaf . . . . . 3656
\heblamed . . . . . 3657
\hebmem . . . . . 3659
\hebnun . . . . . 3661
\hebpe . . . . . 3665
\hebqof . . . . . 3668
\hebresh . . . . . 3669
\hebsamekh . . . . . 3662
\hebshin . . . . . 3670
\hebtav . . . . . 3671
\hebtet . . . . . 3653
\hebtsadi . . . . . 3667
\hebvav . . . . . 3650
\hebyod . . . . . 3654
\hebzayin . . . . . 3651
\hex . . . . . 218, 219, 223, 234, 235
\hfont . . . . . 3637
\hfontdef . . . . . 3624
\hiriq . . . . . 3686
\holam . . . . . 3693
\hskip . . . . . 532
\ht . . . . . 232
\Hy@pdfstringtrue . . . . . 4424
\HyPsd@expand@utfvii . . . . . 38
\HyPsd@expand@UTFviii . . . . . 17, 38

## I

\I . . . . . 1923
\i . . . . . 1544, 1545, 1546, 1970, 2842, 2974, 3895
\IeC . . . . . 97, 98, 675
\ifcase 202, 1806, 3514, 3516, 3523, 3531
\ifeof . . . . . 86
\iffalse . . . . . 62, 101, 107
\IfFileExists . . . . 83, 84, 93, 225, 229
\ifnum . . . . . 196, 197, 301, 305, 332, 336, 359, 363, 386, 390, 412, 494, 541, 595, 647, 688, 834, 856, 876, 929, 973, 981, 982, 992, 993, 994, 1008, 1039, 1052, 1054, 1063, 1075, 1114, 1115, 1117, 1125, 1776, 1797, 3518, 3526, 4368, 4431
\iftrue . . . 104, 252, 299, 330, 357, 384
\ifucshyper@direct . . . . . 4356, 4397
\ifucshyper@prerender . . . 4355, 4412
\ifUnicodeOptioncombine . . . . . 444
\ifUnicodeOptionfasterrors . . . . . 638
\ifUnicodeOptiongraphics . . . 187, 214
\ifUnicodeOptionsavemem . . . 559, 594
\ifUnicodeOptionwarnunknown . . . . 734
\ifx . . . . . 2, 5, 6, 15, 42, 43, 44, 45, 46, 47, 48, 49, 52, 64, 70, 72, 75, 82, 83, 91, 95, 96, 97, 112, 122, 130, 138, 155, 160, 171, 173, 177, 182, 191, 215, 217, 253, 282, 291, 292, 322, 323, 353, 380, 410, 413, 443, 448, 454, 459, 478, 479, 497, 505, 511, 517, 519, 539, 543, 598, 599, 601, 608, 612, 652, 677, 732, 737, 743, 744, 763, 765, 766, 784, 793, 796, 803, 804, 808, 822, 827, 851, 871, 874, 875, 893, 908, 911, 946, 949, 950, 951, 952, 953, 956, 957, 963, 971, 978, 1016, 1105, 1106, 1107, 1112, 1140, 1152, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1172, 1179, 1181, 1188, 1190, 1196, 1201, 1204, 1207, 1212, 1317, 1519, 1539, 1541, 1628, 1633, 1638, 1643, 1650, 1653, 1689, 1693, 1695, 1702, 1707, 1709, 1715, 1777, 1892, 3087, 3094, 3095, 3096, 3097, 3098, 3101, 3114, 3503, 3504, 3544, 3549, 3550, 3554, 3567, 3612, 3630, 4349, 4365, 4366, 4400
\ifxx . . . . . 1539
\immediate . . . . . 227

\includegraphics . . . . . 232
\info . . . . . 636
\input . . . . . 93, 160, 186, 941, 1746, 1754, 1762, 1793, 1908, 3088
\inputencoding . . . . . 781, 782, 783
\inputencodingname . . . . . 939
\InputIfFileExists . . . . . 91, 92, 566, 579, 641, 651

### J

\j . . . . . 1924, 3896
\jischar . . . . . 1783, 1784, 1898, 1899

### K

\kaf . . . . . 3700
\klingona . . . . . 1916
\klingonb . . . . . 1917
\klingonch . . . . . 1918
\klingonD . . . . . 1919
\klingone . . . . . 1920
\klingoneight . . . . . 1950
\klingonfive . . . . . 1947
\klingonfour . . . . . 1946
\klingongh . . . . . 1921
\klingonglotstop . . . . . 1941
\klingonH . . . . . 1922
\klingonI . . . . . 1923
\klingonj . . . . . 1924
\klingonl . . . . . 1925
\klingonm . . . . . 1926
\klingonn . . . . . 1927
\klingonng . . . . . 1928
\klingonnine . . . . . 1951
\klingono . . . . . 1929
\klingonone . . . . . 1943
\klingonp . . . . . 1930
\klingonQ . . . . . 1932
\klingonq . . . . . 1931
\klingonr . . . . . 1933
\klingonS . . . . . 1934
\klingonseven . . . . . 1949
\klingonsix . . . . . 1948
\klingont . . . . . 1935
\klingonthree . . . . . 1945
\klingontlh . . . . . 1936
\klingontwo . . . . . 1944
\klingonu . . . . . 1937
\klingonv . . . . . 1938
\klingonw . . . . . 1939
\klingony . . . . . 1940
\klingonzero . . . . . 1942
\KV@ucembedfont@start . . . . . 808

### L

\l . . . . . 1925
\LastDeclaredEncoding 3581, 3582, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 3830, 3831, 3832, 3833, 3834, 3835, 3836, 3837, 3838, 3839, 3840, 3841, 3842, 3843, 3844, 3845, 3846, 3847, 3848, 3849, 3850, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 3864, 3865, 3866, 3867, 3868, 3869, 3870, 3871, 3872, 3873, 3874, 3875, 3876, 3877, 3878, 3879, 3880, 3881, 3882, 3883, 3884, 3885, 3886, 3887, 3888, 3889, 3890, 3891, 3892, 3893, 3894, 3895, 3896, 3897, 3898, 3899, 3900, 3901, 3902, 3903, 3904, 3905, 3906, 3907, 3908, 3909, 3910, 3911, 3912, 3913, 4203, 4204, 4205, 4206, 4207, 4208, 4209, 4210, 4211, 4212, 4213, 4214, 4215, 4216, 4217, 4218, 4219, 4220, 4221, 4222, 4223, 4224, 4225, 4226, 4227, 4228, 4229, 4230, 4231, 4232, 4233, 4234, 4235, 4236, 4237, 4238, 4239, 4240, 4241, 4242, 4243, 4244, 4245, 4246, 4247, 4248, 4249, 4250, 4251, 4252, 4253, 4254, 4255, 4256, 4257, 4258, 4259, 4260, 4261, 4262, 4263, 4264, 4265, 4266, 4267, 4268, 4269, 4270, 4271, 4272, 4273, 4274, 4275, 4276, 4277, 4278, 4279, 4280, 4281, 4282, 4283, 4284, 4285, 4286, 4287, 4288, 4289, 4290, 4291, 4292, 4293, 4294, 4295, 4296, 4297, 4298, 4299, 4300, 4301, 4302, 4303, 4304, 4305, 4306, 4307,

4308, 4309, 4310, 4311, 4312, 4313, 4314, 4315, 4316, 4317, 4318, 4319, 4320, 4321, 4322, 4323
\lastskip . . . . . 494
\lccode . 277, 278, 1058, 1070, 1071, 1087, 1088, 1089, 1100, 1101, 1116
\leavevmode . . . . . 861, 862
\let . . . . . 38, 53, 62, 66, 73, 76, 78, 95, 96, 101, 104, 107, 113, 115, 117, 170, 190, 210, 256, 257, 258, 260, 263, 407, 409, 410, 415, 443, 455, 478, 482, 512, 545, 560, 562, 567, 577, 579, 587, 591, 593, 596, 600, 602, 603, 618, 669, 739, 740, 752, 781, 796, 803, 816, 817, 819, 865, 886, 897, 900, 901, 917, 918, 919, 921, 922, 923, 1018, 1023, 1033, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1198, 1204, 1210, 1534, 1608, 1610, 1612, 1614, 1651, 1654, 1656, 1667, 1668, 1669, 1670, 1677, 1678, 1733, 1747, 1755, 1763, 1785, 1794, 1900, 1909, 3086, 3089, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3609, 3611, 4365, 4395, 4398, 4405, 4406, 4407, 4408, 4410, 4414, 4415
\lgr@sig@fix . . . . . 1317, 1318
\LinkUnicodeOptionToPkg . . . 112, 150
\long . . . . . 84, 92
\loop 194, 834, 856, 1008, 1039, 1114, 4431
\lowercase . . . . . 279, 1059, 1072, 1090, 1102, 1118
\ltl@cons . 3095, 3107, 3141, 3143, 3145, 3147, 3149, 3151, 3153, 3155, 3157, 3159, 3161, 3163, 3165, 3167, 3169, 3171, 3173, 3175, 3177, 3179, 3181, 3183, 3185, 3187, 3189, 3191, 3193, 3195, 3197, 3199, 3201, 3203, 3205, 3207, 3209, 3211, 3213, 3215
\ltl@dcons 3097, 3110, 3142, 3144, 3146, 3148, 3150, 3152, 3154, 3156, 3158, 3160, 3162, 3164, 3166, 3168, 3170, 3172, 3174, 3176, 3178, 3180, 3182, 3184, 3186, 3188, 3190, 3192, 3194, 3196, 3198, 3200, 3202, 3204, 3206, 3208, 3210, 3212, 3214, 3216
\ltl@gencons . . . . 3100, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254
\ltl@gensymb . . . . . 3125, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324
\ltl@genvow . . . . . 3113, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303
\ltl@ivowel . . . . . 3096, 3122, 3128, 3137, 3138, 3139, 3257, 3259, 3261, 3263, 3265, 3267, 3269, 3271, 3273, 3275, 3277, 3279, 3281, 3283, 3285, 3287, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314
\ltl@state . . . . . 3091, 3093, 3094, 3095, 3096, 3097, 3098
\ltl@tlvoa . . . . . 3092, 3094, 3095
\ltl@vowel . . . . . 3094, 3120, 3133, 3134, 3135, 3136, 3256, 3258, 3260, 3262, 3264, 3266, 3268, 3270, 3272, 3274, 3276, 3278, 3280, 3282, 3284, 3286
\LUC@@empty 3561, 3573, 3574, 3575, 3576
\LUC@@sub . . . . . 3566, 3577, 3578
\luc@char . . . . . 3541, 3548
\luc@loadfont . . . . . 3543, 3551
\LUC@plane@LUC . . . . . 3513, 3522, 3525, 3530, 3533, 3539, 3544, 3545, 3546, 3547, 3549, 3580
\LUC@plane@old . . . . . 3549
\lucchar . . . . . 3505, 3582
\LUCfont . 3544, 3545, 3546, 3547, 3550

## M

\M . . . . . 1557, 1558, 1559, 1564, 1565, 1566, 1567
\m . . . . . 1551, 1552, 1553, 1554, 1555, 1556, 1560, 1561, 1562, 1563, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1586, 1587, 1588, 1589, 1590, 1591, 1926
\makeatletter . . . . . 3606
\mandatory@arg . . 1689, 1690, 1695, 1696, 1704, 1712, 3562, 3567, 3568
\maqaf . . . . . 3675

\meaning . . . . . 237, 607, 1119, 1674, 1780, 1798, 1895, 3634, 3635
\measuring@false . . . . . 732
\mem . . . . . 3702
\message . . . . . 132
\MessageBreak . . . . . 123, 131, 132, 148, 183, 241, 242, 243, 244, 419, 431, 432, 434, 464, 548, 549, 643, 653, 662, 663, 667, 735, 741, 757, 758, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 895, 914, 1095, 1127, 4351
\meteg . . . . . 3692
\mkr@at . . . . . 3625
\mkr@font 3624, 3631, 3632, 3633, 3637
\mkr@quote . . . . . 3609, 3611
\multiply . . . . . 200, 974, 983, 985, 995, 997, 999, 1055, 1064, 1066, 1076, 1078, 1081, 1767, 1772, 3508, 3511, 3520, 3528, 3537, 4373, 4376, 4379, 4382, 4385

## N

\N . . . . . 1928
\n . . . . . 1927
\NeedsTeXFormat . . . . . 1962, 2109, 2834, 2964, 3554, 3751, 4200
\newcommand . . . . . 1162, 3094, 3095, 3096, 3097, 3100, 3113, 3125, 4363, 4364, 4392, 4429
\newcount . . . . . 211
\newif . . . . . 61, 4355, 4356
\newlinechar . . . . . 123, 131
\newread . . . . . 82
\newtoks . . . . . 473, 474, 475
\next . . . . . 593, 596, 598, 600, 602, 605
\NOBOUNDARY 3656, 3659, 3661, 3665, 3667, 3700, 3702, 3704, 3706, 3708
\noexpand . . . . . 98, 231, 232, 234, 273, 439, 465, 514, 534, 653, 736, 742, 754, 837, 857, 860, 861, 862, 1016, 1018, 1019, 1020, 1022, 1025, 1026, 1027, 1028, 1029, 1034, 1035, 1036, 1046, 1144, 1145, 1146, 1147, 1148, 1778, 1893, 3105, 3107, 3108, 3109, 3110, 3118, 3120, 3121, 3122, 3127, 3128, 3620, 3622, 3623, 3624, 3635
\number . . . . . 224, 253, 265, 270, 285, 414, 416, 417, 424, 430, 462, 528, 534, 538, 544, 546, 548, 553, 601, 607, 609, 611, 612, 613, 615, 616, 643, 650, 651, 731, 751, 755, 825, 826, 830, 837, 857, 960, 1003, 1005, 1016, 1026, 1029, 1046, 1062, 1074, 1083, 1092, 1094, 1126, 1144, 1145, 1146, 1147, 1148, 1775, 1776, 1779, 1798, 1894, 3539, 3541, 4367, 4370, 4372, 4375, 4378, 4381, 4384, 4387, 4388, 4389, 4393, 4400, 4402
\nun . . . . . 3704

## O

\o . . . . . 1929
\old@unichar . . . 4398, 4401, 4414, 4417
\openin . . . . . 85
\optional@arg . . . . . 1712
options:
combine . . . . . 168
default . . . . . 166
document . . . . . 164
fasterrors . . . . . 160
graphics . . . . . 162
savemem . . . . . 163
warnunknown . . . . . 161
\or . . . . . 202, 203, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 3514, 3515, 3516, 3517, 3523, 3524, 3531, 3532

## P

\P . . . . . 278, 1101
\p . . . . . 1930
\p@ . . . . . 1710
\PackageError . . 122, 126, 156, 462, 470, 580, 741, 851, 953, 960, 965, 1667, 1731, 3102, 3115, 4369
\PackageNoteNoLine . . . . . 913

\PackageWarning . . . . . 130, 134, 240, 422, 429, 498, 552, 735, 767, 1094, 1126, 4350
\PackageWarningNoLine . . . . . 6, 7
\parse@UTFviii@a . . . . . 918, 922
\parse@UTFviii@b . . . . . 919, 923
\parse@XML@charref . . . . 917, 921, 930
\patach . . . . . 3698
\patah . . . . . 3689
\path . . . . . 218, 223, 229, 233
\pdfoutput . . . . . 4349
\pdfstringdef . . . . . 4410, 4411
\pdfstringdefPreHook . . . . 4395, 4396
\pe . . . . . 3706
\perthousand . . . . . 3894
\PreloadUnicodePage . . . . . 465, 575
\PrerenderUnicode . . . . . 582, 4425
\PrintUnicodeName . . . . . 665
\ProcessOptions . 180, 801, 1672, 4361
\protect . . . . . 95, 97, 188, 505, 517, 621, 623, 625, 627, 629, 631, 677, 728, 954, 3615
\protected . . . . . 850, 926, 1015, 1045
\providecommand . . . . . 1162, 3561, 3566, 3919, 4329
\ProvidesFile . . . . . 234, 908, 909, 1140, 1141, 1684, 1743, 1751, 1759, 1790, 1905, 1913, 1955, 1963, 2097, 2103, 2110, 2810, 2818, 2826, 2835, 2952, 2958, 2965, 3077, 3386, 3483, 3489, 3495, 3557, 3593, 3599, 3605, 3713, 3724, 3734, 3741, 3752, 3917, 4201, 4327
\ProvidesPackage 2, 3, 794, 1606, 4347
\ProvideTextCommand . . . . . 1612, 1613
\ProvideTextCommandDefault . . . . . 1205, 3447, 3448

## Q

\Q . . . . . 1932
\q . . . . . 1931
\qamats . . . . . 3690
\qubuts . . . . . 3691
\quotedblbase . . 1971, 2843, 2975, 3899
\quotesinglbase . . . . 1972, 2844, 2976

## R

\r . . . . . 1933, 3883
\relax . . . . . 53, 95, 96, 113, 155, 190, 191, 192, 195, 197, 204, 220, 221, 253, 257, 260, 292, 323, 409, 410, 412, 414, 443, 539, 540, 541, 544, 571, 591, 599, 601, 612, 634, 649, 681, 683, 684, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 718, 721, 725, 726, 727, 731, 739, 747, 760, 803, 804, 856, 928, 932, 946, 952, 957, 964, 970, 974, 975, 976, 983, 984, 985, 986, 987, 1001, 1007, 1008, 1016, 1020, 1030, 1033, 1038, 1039, 1047, 1051, 1052, 1054, 1055, 1056, 1063, 1064, 1076, 1107, 1134, 1144, 1145, 1146, 1147, 1148, 1157, 1172, 1181, 1201, 1202, 1203, 1695, 3101, 3114, 3538, 3544, 3567, 3612, 4365, 4400, 4430, 4431, 4433
\repeat . . . . . 205, 845, 859, 1031, 1048, 1124, 4434
\RequirePackage . . . . . 179, 187, 795, 806, 957, 1666, 3610, 4353
\reserved@a . . . . . 67, 76, 86, 87, 89, 682, 713, 719, 720, 722, 724
\reserved@b . . . . . 68, 78, 685, 687, 691
\reserved@c . . . . . 73, 76, 78, 81, 689, 710, 711, 712, 714, 715, 716, 717, 718, 721, 723
\reserved@d . . . . . 66, 75
\restore@utf@viii@actives . . . . . 766, 786, 1032, 1129

## S

\S . . . . . 1934
savemem (option) . . . . . 163
\segol . . . . . 3688
\selectfont . . . . . 1661, 1662, 1778, 1893, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288,

2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428, 2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450, 2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472, 2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494, 2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516, 2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538, 2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560, 2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582, 2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604, 2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626, 2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648, 2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670, 2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692, 2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714, 2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736, 2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758, 2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780, 2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802, 2804, 2806, 3550, 4405

\selectlanguage . . . . . 4407

\setbox . . . . . 230, 587

\setkeys . . . . . 821

\SetUnicodeOption . 151, 152, 166, 168, 175, 180, 864, 866, 889, 891

\SetUnicodeOption@ . . . . . 152, 153

\sheva . . . . . 3682

\shin . . . . . 3694, 3695

\shindot . . . . . 3694

\sindot . . . . . 3695

\sofpasuq . . . . . 3676

\space . . . . . 210, 218, 243, 823, 837, 852, 914, 915, 1126, 1712, 1779, 1894, 3102, 3115, 3625, 3635

\string 773, 774, 777, 823, 852, 853, 894, 895, 896, 1025, 1034, 1035, 1036, 1111, 1120, 1153, 1172, 1175, 1181, 1184, 1197, 1206, 3102, 3115, 3621, 3625, 4393, 4418, 4419, 4420, 4421, 4422, 4423

\sub@sfcnt . . . . 1697, 1699, 3569, 3571

**T**

\T . . . . . 1593, 1594, 1595, 1596, 1936

\t . . . . . 1935

\temp@a . . . . 650, 1110, 1119, 1649, 1650, 1651, 1654, 1656, 1660, 1776, 1777, 1778, 1797, 1798, 1892, 1893, 3619, 3623, 3624, 3635

\temp@b . . . . . 1649, 1650, 1777, 1780, 1781, 1892, 1895, 1896

\tengwarAare . . . . . 3419

\tengwarAareNuquerna . . . . . 3420

\tengwarAcute . . . . . 3465

\tengwarAlda . . . . . 3416

\tengwarAmaticse . . . . . 3463

\tengwarAmpa . . . . . 3402

\tengwarAnca . . . . . 3403

\tengwarAndo . . . . . 3393

\tengwarAnga . . . . . 3395

\tengwarAnna . . . . . 3411

\tengwarAnnaSindarinwa . . . . . 3428

\tengwarAnto . . . . . 3401

\tengwarArda . . . . . 3414

\tengwarBreve . . . . . 3474

\tengwarCalma . . . . . 3391

\tengwarDoubleAcute . . . . . 3466

\tengwarDoubleAcuteBelow . . . . . 3476

\tengwarDoubleLeftCurl . . . . . 3470

\tengwarDoublePusta . . . . . 3442

\tengwarDoubler . . . . . 3472

\tengwarDoubleRightCurl . . . . . 3468

\tengwarEight . . . . . 3455

\tengwarEleven . . . . . 3458

\tengwarExclam . . . . . 3443

\tengwarExtAmpa . . . . . 3434

\tengwarExtAnca . . . . . 3435
\tengwarExtAnto . . . . . 3433
\tengwarExtFormen . . . . . 3430
\tengwarExtHarma . . . . . 3431
\tengwarExtHwesta . . . . . 3432
\tengwarExtThuule . . . . . 3429
\tengwarExtUnque . . . . . 3436
\tengwarFive . . . . . 3452
\tengwarFormen . . . . . 3398
\tengwarFour . . . . . 3451
\tengwarHalla . . . . . 3425
\tengwarHarma . . . . . 3399
\tengwarHwesta . . . . . 3400
\tengwarHwestaSindarinwa . . . . . 3422
\tengwarHyarmen . . . . . 3421
\tengwarLambe . . . . . 3415
\tengwarLeftCurl . . . . . 3469
\tengwarLeftCurlBelow . . . . . 3478
\tengwarLongCarrier . . . . . 3427
\tengwarLongCarrierBelow . . . . . 3475
\tengwarLongSection . . . . . 3446
\tengwarMalta . . . . . 3406
\tengwarNasalizer . . . . . 3471
\tengwarNine . . . . . 3456
\tengwarNoldo . . . . . 3407
\tengwarNunticse . . . . . 3464
\tengwarNuumen . . . . . 3405
\tengwarNwalme . . . . . 3408
\tengwarOne . . . . . 3448
\tengwarOore . . . . . 3409
\tengwarParma . . . . . 3390
\tengwarPusta . . . . . 3441
\tengwarQuesse . . . . . 3392
\tengwarQuestion . . . . . 3444
\tengwarRightCurl . . . . . 3467
\tengwarRightCurlBelow . . . . . 3477
\tengwarRoomen . . . . . 3413
\tengwarSection . . . . . 3445
\tengwarSeven . . . . . 3454
\tengwarShortCarrier . . . . . 3426
\tengwarSilme . . . . . 3417
\tengwarSilmeNuquerna . . . . . 3418
\tengwarSix . . . . . 3453
\tengwarStemlessAnna . . . . . 3439
\tengwarStemlessOore . . . . 3437, 3447
\tengwarStemlessVala . . . . . 3438
\tengwarStemlessVilya . . . 3440, 3448
\tengwarTen . . . . . 3457
\tengwarThree . . . . . 3450
\tengwarThreeDotsAbove . . . . . 3459
\tengwarThreeDotsBelow . . . . . 3460
\tengwarThuule . . . . . 3397
\tengwarTilde . . . . . 3473
\tengwarTinco . . . . . 3389
\tengwarTwo . . . . . 3449
\tengwarTwoDotsAbove . . . . . 3461
\tengwarTwoDotsBelow . . . . . 3462
\tengwarUmbar . . . . . 3394
\tengwarUngwe . . . . . 3396
\tengwarUnque . . . . . 3404
\tengwarUure . . . . . 3424
\tengwarVala . . . . . 3410
\tengwarVilya . . . . . 3412
\tengwarYanta . . . . . 3423
\tengwarZero . . . . . 3447
\textAlpha . . . . . 1266, 1340, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1523
\textalpha . . . . . 1298, 1346, 1347, 1348, 1349, 1351, 1352, 1353, 1354, 1356, 1357, 1358, 1523
\textanoteleia . . . . . 1260
\textaristerikeraia . . . . . 1447
\textascii 1205, 1209, 1212, 1219, 1541, 2115, 2116, 3132, 3581, 3697
\textasciicircum . . . 1973, 2845, 2977
\textasciiencoding . . . . . 1208, 1209
\textasciitilde . . . . 1974, 2846, 2978
\textautosigma . . . . . 1316, 1530
\textbackslash . . . . . 1975, 2847, 2979
\textbaht . . . . . 2920
\textbar . . . . . 1976, 2848, 2980
\textBeta . . . . . 1267, 1523
\textbeta . . . . . 1299, 1523
\textBhook . . . . . 1552
\textbhook . . . . . 1551
\textbraceleft . . . . . 1977, 2849, 2981
\textbraceright . . . . 1978, 2850, 2982
\textChi . . . . . 1282, 1528
\textchi . . . . . 1314, 1528
\textChook . . . . . 1582
\textchook . . . . . 1583
\textDafrican . . . . . 1564
\textdasia . . . . . 1261, 1330, 1347, 1363, 1379, 1395, 1399, 1419, 1423, 1443, 1451, 1461, 1469, 1479, 1489, 1496, 1503, 1518
\textdasiaiota . . . . . 1330, 1511
\textdasiaoxia . . . . . . 1287, 1336, 1352, 1369, 1384, 1403, 1407, 1427, 1431, 1455, 1465, 1473, 1483, 1493, 1498, 1507
\textdasiaoxiaiota . . . . . 1336, 1515
\textdasiaperispomeni . . . . . 1265, 1339, 1357, 1374, 1389, 1411, 1415, 1457, 1475, 1485, 1499, 1509
\textdasiaperispomeniiota 1339, 1517

\textdasiavaria . . . . . 1268, 1334, 1349, 1371, 1381, 1397, 1401, 1421, 1425, 1453, 1463, 1471, 1481, 1491, 1497, 1505
\textdasiavariaiota . . . . . 1334, 1513
\textdblgravecmb . . . . . 1599
\textDelta . . . . . 1269, 1523
\textdelta . . . . . 1301, 1523
\textdevanagaria . . . . . 1993
\textdevanagariaa . . . . . 1994
\textdevanagariabbreviation . . . 2093
\textdevanagariai . . . . . 2004
\textdevanagarianudatta . . . . . 2066
\textdevanagarianusvara . . . . . 1991
\textdevanagariau . . . . . 2008
\textdevanagariavagraha . . . . . 2047
\textdevanagariba . . . . . 2032
\textdevanagaribha . . . . . 2033
\textdevanagarica . . . . . 2014
\textdevanagaricandrabindu . . . . 1990
\textdevanagaricandrae . . . . . 2001
\textdevanagaricandrao . . . . . 2005
\textdevanagaricha . . . . . 2015
\textdevanagarida . . . . . 2026
\textdevanagaridanda . . . . . 2081
\textdevanagaridda . . . . . 2021
\textdevanagaridddha . . . . . 2073
\textdevanagariddha . . . . . 2022
\textdevanagaridha . . . . . 2027
\textdevanagaridoubledanda . . . . 2082
\textdevanagarie . . . . . 2003
\textdevanagarieight . . . . . 2091
\textdevanagarifa . . . . . 2075
\textdevanagarifive . . . . . 2088
\textdevanagarifour . . . . . 2087
\textdevanagariga . . . . . 2011
\textdevanagarigha . . . . . 2012
\textdevanagarighha . . . . . 2071
\textdevanagariha . . . . . 2045
\textdevanagarii . . . . . 1995
\textdevanagariii . . . . . 1996
\textdevanagarija . . . . . 2016
\textdevanagarijha . . . . . 2017
\textdevanagarika . . . . . 2009
\textdevanagarikha . . . . . 2010
\textdevanagarikhha . . . . . 2070
\textdevanagarila . . . . . 2038
\textdevanagarilla . . . . . 2039
\textdevanagarillla . . . . . 2040
\textdevanagarima . . . . . 2034
\textdevanagarina . . . . . 2028
\textdevanagaringa . . . . . 2013
\textdevanagarinine . . . . . 2092
\textdevanagarinna . . . . . 2023
\textdevanagarinnna . . . . . 2029
\textdevanagarinukta . . . . . 2046
\textdevanagarinya . . . . . 2018
\textdevanagario . . . . . 2007
\textdevanagariom . . . . . 2064
\textdevanagarione . . . . . 2084
\textdevanagaripa . . . . . 2030
\textdevanagaripha . . . . . 2031
\textdevanagariqa . . . . . 2069
\textdevanagarira . . . . . 2036
\textdevanagarirha . . . . . 2074
\textdevanagarirra . . . . . 2037
\textdevanagarisa . . . . . 2044
\textdevanagariseven . . . . . 2090
\textdevanagarisha . . . . . 2042
\textdevanagarishorte . . . . . 2002
\textdevanagarishorto . . . . . 2006
\textdevanagarisix . . . . . 2089
\textdevanagarissa . . . . . 2043
\textdevanagarita . . . . . 2024
\textdevanagaritha . . . . . 2025
\textdevanagarithree . . . . . 2086
\textdevanagaritta . . . . . 2019
\textdevanagarittha . . . . . 2020
\textdevanagaritwo . . . . . 2085
\textdevanagariu . . . . . 1997
\textdevanagariudatta . . . . . 2065
\textdevanagariuu . . . . . 1998
\textdevanagariva . . . . . 2041
\textdevanagarivirama . . . . . 2063
\textdevanagarivisarga . . . . . 1992
\textdevanagarivocalicl . . . . . 2000
\textdevanagarivocalicll . . . . . 2078
\textdevanagarivocalicr . . . . . 1999
\textdevanagarivocalicrr . . . . . 2077
\textdevanagarivowelaa . . . . . 2048
\textdevanagarivowelai . . . . . 2058
\textdevanagarivowelau . . . . . 2062
\textdevanagarivowelcandrae . . . 2055
\textdevanagarivowelcandrao . . . 2059
\textdevanagarivowele . . . . . 2057
\textdevanagarivoweli . . . . . 2049
\textdevanagarivowelii . . . . . 2050
\textdevanagarivowelo . . . . . 2061
\textdevanagarivowelshorte . . . . 2056
\textdevanagarivowelshorto . . . . 2060
\textdevanagarivowelu . . . . . 2051
\textdevanagarivoweluu . . . . . 2052
\textdevanagarivowelvocalicl . . 2079
\textdevanagarivowelvocalicll . 2080
\textdevanagarivowelvocalicr . . 2053
\textdevanagarivowelvocalicrr . 2054
\textdevanagariya . . . . . 2035
\textdevanagariyya . . . . . 2076

\textdevanagariza . . . . . 2072
\textdevanagarizero . . . . . 2083
\textdexiakeraia . . . . . 1446
\textDhook . . . . . 1554
\textdhook . . . . . 1553
\textdialytikaoxia . . . . . 1244
\textdialytikaperispomeni . . . . . 1240, 1437, 1441
\textdialytikatonos . . . . . 1243, 1244, 1436, 1440
\textdialytikavaria . 1245, 1435, 1439
\textDigamma . . . . . 1391, 1533
\textdigamma . . . . . 1359, 1533
\textdollar . . . . . 1979, 2851, 2983
\textdtail . . . . . 1565
\textemdash . . . . 1345, 1980, 2852, 2984
\textendash . . . . . 1981, 2853, 2985
\textEopen . . . . . 1556, 1593
\texteopen . . . . . 1555, 1594
\textEpsilon 1270, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1524
\textepsilon 1302, 1418, 1419, 1420, 1421, 1426, 1427, 1428, 1429, 1524
\textEreversed . . . . . 1559
\textEsh . . . . . 1576
\textesh . . . . . 1577
\textEta . . . . . 1273, 1341, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1525
\texteta . . . . . 1305, 1362, 1363, 1364, 1368, 1369, 1370, 1371, 1373, 1374, 1375, 1376, 1525
\textethiopicba . . . . . 2291, 2292
\textethiopicbaa . . . . . 2297, 2298
\textethiopicbe . . . . . 2301, 2302
\textethiopicbee . . . . . 2299, 2300
\textethiopicbi . . . . . 2295, 2296
\textethiopicbo . . . . . 2303, 2304
\textethiopicbu . . . . . 2293, 2294
\textethiopicbwa . . . . . 2305, 2306
\textethiopicca . . . . . 2339, 2340
\textethiopiccaa . . . . . 2345, 2346
\textethiopicce . . . . . 2349, 2350
\textethiopiccee . . . . . 2347, 2348
\textethiopiccha . . . . . 2651, 2652
\textethiopicchaa . . . . . 2657, 2658
\textethiopicche . . . . . 2661, 2662
\textethiopicchee . . . . . 2659, 2660
\textethiopicchi . . . . . 2655, 2656
\textethiopiccho . . . . . 2663, 2664
\textethiopicchu . . . . . 2653, 2654
\textethiopicchwa . . . . . 2665, 2666
\textethiopicci . . . . . 2343, 2344
\textethiopicco . . . . . 2351, 2352
\textethiopiccolon . . . . . 2759, 2760
\textethiopiccomma . . . . . 2755, 2756
\textethiopiccu . . . . . 2341, 2342
\textethiopiccwa . . . . . 2353, 2354
\textethiopicda . . . . . 2549, 2550
\textethiopicdaa . . . . . 2555, 2556
\textethiopicdda . . . . . 2565, 2566
\textethiopicddaa . . . . . 2571, 2572
\textethiopicdde . . . . . 2575, 2576
\textethiopicddee . . . . . 2573, 2574
\textethiopicddi . . . . . 2569, 2570
\textethiopicddo . . . . . 2577, 2578
\textethiopicddu . . . . . 2567, 2568
\textethiopicddwa . . . . . 2579, 2580
\textethiopicde . . . . . 2559, 2560
\textethiopicdee . . . . . 2557, 2558
\textethiopicdi . . . . . 2553, 2554
\textethiopicdo . . . . . 2561, 2562
\textethiopicdu . . . . . 2551, 2552
\textethiopicdwa . . . . . 2563, 2564
\textethiopiceight . . . . . 2781, 2782
\textethiopiceighty . . . . . 2799, 2800
\textethiopicfa . . . . . 2713, 2714
\textethiopicfaa . . . . . 2719, 2720
\textethiopicfe . . . . . 2723, 2724
\textethiopicfee . . . . . 2721, 2722
\textethiopicfi . . . . . 2717, 2718
\textethiopicfifty . . . . . 2793, 2794
\textethiopicfive . . . . . 2775, 2776
\textethiopicfo . . . . . 2725, 2726
\textethiopicforty . . . . . 2791, 2792
\textethiopicfour . . . . . 2773, 2774
\textethiopicfu . . . . . 2715, 2716
\textethiopicfullstop . . . 2753, 2754
\textethiopicfwa . . . . . 2727, 2728
\textethiopicfya . . . . . 2749, 2750
\textethiopicga . . . . . 2597, 2598
\textethiopicgaa . . . . . 2603, 2604
\textethiopicge . . . . . 2607, 2608
\textethiopicgee . . . . . 2605, 2606
\textethiopicgga . . . . . 2621, 2622
\textethiopicggaa . . . . . 2627, 2628
\textethiopicgge . . . . . 2631, 2632
\textethiopicggee . . . . . 2629, 2630
\textethiopicggi . . . . . 2625, 2626
\textethiopicggo . . . . . 2633, 2634
\textethiopicggu . . . . . 2623, 2624
\textethiopicgi . . . . . 2601, 2602
\textethiopicglottala . . . 2411, 2412
\textethiopicglottalaa . . 2417, 2418
\textethiopicglottale . . . 2421, 2422
\textethiopicglottalee . . 2419, 2420
\textethiopicglottali . . . 2415, 2416
\textethiopicglottalo . . . 2423, 2424

\textethiopicglottalu ... 2413, 2414
\textethiopicglottalwa .. 2425, 2426
\textethiopicgo ..... 2609, 2610
\textethiopicgu ..... 2599, 2600
\textethiopicgwa ..... 2611, 2612
\textethiopicgwaa ..... 2615, 2616
\textethiopicgwe ..... 2619, 2620
\textethiopicgwee ..... 2617, 2618
\textethiopicgwi ..... 2613, 2614
\textethiopicha ..... 2117, 2118
\textethiopichaa ..... 2123, 2124
\textethiopiche ..... 2127, 2128
\textethiopichee ..... 2125, 2126
\textethiopichha ..... 2147, 2148
\textethiopichhaa ..... 2153, 2154
\textethiopichhe ..... 2157, 2158
\textethiopichhee ..... 2155, 2156
\textethiopichhi ..... 2151, 2152
\textethiopichho ..... 2159, 2160
\textethiopichhu ..... 2149, 2150
\textethiopichhwa ..... 2161, 2162
\textethiopichi ..... 2121, 2122
\textethiopicho ..... 2129, 2130
\textethiopichu ..... 2119, 2120
\textethiopichundred .... 2803, 2804
\textethiopicja ..... 2581, 2582
\textethiopicjaa ..... 2587, 2588
\textethiopicje ..... 2591, 2592
\textethiopicjee ..... 2589, 2590
\textethiopicji ..... 2585, 2586
\textethiopicjo ..... 2593, 2594
\textethiopicju ..... 2583, 2584
\textethiopicjwa ..... 2595, 2596
\textethiopicka ..... 2427, 2428
\textethiopickaa ..... 2433, 2434
\textethiopicke ..... 2437, 2438
\textethiopickee ..... 2435, 2436
\textethiopicki ..... 2431, 2432
\textethiopicko ..... 2439, 2440
\textethiopicku ..... 2429, 2430
\textethiopickwa ..... 2441, 2442
\textethiopickwaa ..... 2445, 2446
\textethiopickwe ..... 2449, 2450
\textethiopickwee ..... 2447, 2448
\textethiopickwi ..... 2443, 2444
\textethiopickxa ..... 2451, 2452
\textethiopickxaa ..... 2457, 2458
\textethiopickxe ..... 2461, 2462
\textethiopickxee ..... 2459, 2460
\textethiopickxi ..... 2455, 2456
\textethiopickxo ..... 2463, 2464
\textethiopickxu ..... 2453, 2454
\textethiopickxwa ..... 2465, 2466
\textethiopickxwaa ..... 2469, 2470
\textethiopickxwe ..... 2473, 2474
\textethiopickxwee ..... 2471, 2472
\textethiopickxwi ..... 2467, 2468
\textethiopicla ..... 2131, 2132
\textethiopiclaa ..... 2137, 2138
\textethiopicle ..... 2141, 2142
\textethiopiclee ..... 2139, 2140
\textethiopicli ..... 2135, 2136
\textethiopiclo ..... 2143, 2144
\textethiopiclu ..... 2133, 2134
\textethiopiclwa ..... 2145, 2146
\textethiopicma ..... 2163, 2164
\textethiopicmaa ..... 2169, 2170
\textethiopicme ..... 2173, 2174
\textethiopicmee ..... 2171, 2172
\textethiopicmi ..... 2167, 2168
\textethiopicmo ..... 2175, 2176
\textethiopicmu ..... 2165, 2166
\textethiopicmwa ..... 2177, 2178
\textethiopicmya ..... 2747, 2748
\textethiopicna ..... 2379, 2380
\textethiopicnaa ..... 2385, 2386
\textethiopicne ..... 2389, 2390
\textethiopicnee ..... 2387, 2388
\textethiopicni ..... 2383, 2384
\textethiopicnine ..... 2783, 2784
\textethiopicninety ..... 2801, 2802
\textethiopicno ..... 2391, 2392
\textethiopicnu ..... 2381, 2382
\textethiopicnwa ..... 2393, 2394
\textethiopicnya ..... 2395, 2396
\textethiopicnyaa ..... 2401, 2402
\textethiopicnye ..... 2405, 2406
\textethiopicnyee ..... 2403, 2404
\textethiopicnyi ..... 2399, 2400
\textethiopicnyo ..... 2407, 2408
\textethiopicnyu ..... 2397, 2398
\textethiopicnywa ..... 2409, 2410
\textethiopicone ..... 2767, 2768
\textethiopicpa ..... 2729, 2730
\textethiopicpaa ..... 2735, 2736
\textethiopicparagraph .. 2765, 2766
\textethiopicpe ..... 2739, 2740
\textethiopicpee ..... 2737, 2738
\textethiopicpha ..... 2667, 2668
\textethiopicphaa ..... 2673, 2674
\textethiopicpharyngeala . 2489, 2490
\textethiopicpharyngealaa 2495, 2496
\textethiopicpharyngeale . 2499, 2500
\textethiopicpharyngealee 2497, 2498
\textethiopicpharyngeali . 2493, 2494
\textethiopicpharyngealo . 2501, 2502
\textethiopicpharyngealu . 2491, 2492
\textethiopicphe ..... 2677, 2678

\textethiopicphee ..... 2675, 2676
\textethiopicphi ..... 2671, 2672
\textethiopicpho ..... 2679, 2680
\textethiopicphu ..... 2669, 2670
\textethiopicphwa ..... 2681, 2682
\textethiopicpi ..... 2733, 2734
\textethiopicpo ..... 2741, 2742
\textethiopicprefacecolon 2761, 2762
\textethiopicpu ..... 2731, 2732
\textethiopicpwa ..... 2743, 2744
\textethiopicqa ..... 2243, 2244
\textethiopicqaa ..... 2249, 2250
\textethiopicqe ..... 2253, 2254
\textethiopicqee ..... 2251, 2252
\textethiopicqha ..... 2267, 2268
\textethiopicqhaa ..... 2273, 2274
\textethiopicqhe ..... 2277, 2278
\textethiopicqhee ..... 2275, 2276
\textethiopicqhi ..... 2271, 2272
\textethiopicqho ..... 2279, 2280
\textethiopicqhu ..... 2269, 2270
\textethiopicqhwa ..... 2281, 2282
\textethiopicqhwaa ..... 2285, 2286
\textethiopicqhwe ..... 2289, 2290
\textethiopicqhwee ..... 2287, 2288
\textethiopicqhwi ..... 2283, 2284
\textethiopicqi ..... 2247, 2248
\textethiopicqo ..... 2255, 2256
\textethiopicqu ..... 2245, 2246
\textethiopicquestionmark 2763, 2764
\textethiopicqwa ..... 2257, 2258
\textethiopicqwaa ..... 2261, 2262
\textethiopicqwe ..... 2265, 2266
\textethiopicqwee ..... 2263, 2264
\textethiopicqwi ..... 2259, 2260
\textethiopicra ..... 2195, 2196
\textethiopicraa ..... 2201, 2202
\textethiopicre ..... 2205, 2206
\textethiopicree ..... 2203, 2204
\textethiopicri ..... 2199, 2200
\textethiopicro ..... 2207, 2208
\textethiopicru ..... 2197, 2198
\textethiopicrwa ..... 2209, 2210
\textethiopicrya ..... 2745, 2746
\textethiopicsa ..... 2211, 2212
\textethiopicsaa ..... 2217, 2218
\textethiopicse ..... 2221, 2222
\textethiopicsee ..... 2219, 2220
\textethiopicsemicolon .. 2757, 2758
\textethiopicseven ..... 2779, 2780
\textethiopicseventy .... 2797, 2798
\textethiopicsha ..... 2227, 2228
\textethiopicshaa ..... 2233, 2234
\textethiopicshe ..... 2237, 2238
\textethiopicshee ..... 2235, 2236
\textethiopicshi ..... 2231, 2232
\textethiopicsho ..... 2239, 2240
\textethiopicshu ..... 2229, 2230
\textethiopicshwa ..... 2241, 2242
\textethiopicsi ..... 2215, 2216
\textethiopicsix ..... 2777, 2778
\textethiopicsixty ..... 2795, 2796
\textethiopicso ..... 2223, 2224
\textethiopicsu ..... 2213, 2214
\textethiopicswa ..... 2225, 2226
\textethiopicsza ..... 2179, 2180
\textethiopicszaa ..... 2185, 2186
\textethiopicsze ..... 2189, 2190
\textethiopicszee ..... 2187, 2188
\textethiopicszi ..... 2183, 2184
\textethiopicszo ..... 2191, 2192
\textethiopicszu ..... 2181, 2182
\textethiopicszwa ..... 2193, 2194
\textethiopicta ..... 2323, 2324
\textethiopictaa ..... 2329, 2330
\textethiopicte ..... 2333, 2334
\textethiopictee ..... 2331, 2332
\textethiopicten ..... 2785, 2786
\textethiopictenthousand . 2805, 2806
\textethiopictha ..... 2635, 2636
\textethiopicthaa ..... 2641, 2642
\textethiopicthe ..... 2645, 2646
\textethiopicthee ..... 2643, 2644
\textethiopicthi ..... 2639, 2640
\textethiopicthirty ..... 2789, 2790
\textethiopictho ..... 2647, 2648
\textethiopicthree ..... 2771, 2772
\textethiopicthu ..... 2637, 2638
\textethiopicthwa ..... 2649, 2650
\textethiopicti ..... 2327, 2328
\textethiopicto ..... 2335, 2336
\textethiopictsa ..... 2683, 2684
\textethiopictsaa ..... 2689, 2690
\textethiopictse ..... 2693, 2694
\textethiopictsee ..... 2691, 2692
\textethiopictsi ..... 2687, 2688
\textethiopictso ..... 2695, 2696
\textethiopictsu ..... 2685, 2686
\textethiopictswa ..... 2697, 2698
\textethiopictu ..... 2325, 2326
\textethiopictwa ..... 2337, 2338
\textethiopictwenty ..... 2787, 2788
\textethiopictwo ..... 2769, 2770
\textethiopictza ..... 2699, 2700
\textethiopictzaa ..... 2705, 2706
\textethiopictze ..... 2709, 2710
\textethiopictzee ..... 2707, 2708
\textethiopictzi ..... 2703, 2704

\textethiopictzo ..... 2711, 2712
\textethiopictzu ..... 2701, 2702
\textethiopicva ..... 2307, 2308
\textethiopicvaa ..... 2313, 2314
\textethiopicve ..... 2317, 2318
\textethiopicvee ..... 2315, 2316
\textethiopicvi ..... 2311, 2312
\textethiopicvo ..... 2319, 2320
\textethiopicvu ..... 2309, 2310
\textethiopicvwa ..... 2321, 2322
\textethiopicwa ..... 2475, 2476
\textethiopicwaa ..... 2481, 2482
\textethiopicwe ..... 2485, 2486
\textethiopicwee ..... 2483, 2484
\textethiopicwi ..... 2479, 2480
\textethiopicwo ..... 2487, 2488
\textethiopicwordspace .. 2751, 2752
\textethiopicwu ..... 2477, 2478
\textethiopicxa ..... 2355, 2356
\textethiopicxaa ..... 2361, 2362
\textethiopicxe ..... 2365, 2366
\textethiopicxee ..... 2363, 2364
\textethiopicxi ..... 2359, 2360
\textethiopicxo ..... 2367, 2368
\textethiopicxu ..... 2357, 2358
\textethiopicxwa ..... 2369, 2370
\textethiopicxwaa ..... 2373, 2374
\textethiopicxwe ..... 2377, 2378
\textethiopicxwee ..... 2375, 2376
\textethiopicxwi ..... 2371, 2372
\textethiopicya ..... 2535, 2536
\textethiopicyaa ..... 2541, 2542
\textethiopicye ..... 2545, 2546
\textethiopicyee ..... 2543, 2544
\textethiopicyi ..... 2539, 2540
\textethiopicyo ..... 2547, 2548
\textethiopicyu ..... 2537, 2538
\textethiopicza ..... 2503, 2504
\textethiopiczaa ..... 2509, 2510
\textethiopicze ..... 2513, 2514
\textethiopiczee ..... 2511, 2512
\textethiopiczha ..... 2519, 2520
\textethiopiczhaa ..... 2525, 2526
\textethiopiczhe ..... 2529, 2530
\textethiopiczhee ..... 2527, 2528
\textethiopiczhi ..... 2523, 2524
\textethiopiczho ..... 2531, 2532
\textethiopiczhu ..... 2521, 2522
\textethiopiczhwa ..... 2533, 2534
\textethiopiczi ..... 2507, 2508
\textethiopiczo ..... 2515, 2516
\textethiopiczu ..... 2505, 2506
\textethiopiczwa ..... 2517, 2518
\texteturned ..... 1558
\texteuro ..... 1232
\textexclamdown ..... 1597
\textEzh ..... 1580
\textezh ..... 1581
\textFhook ..... 1572
\textflorin ..... 1573
\textGamma ..... 1272, 1525
\textgamma ..... 1304, 1525
\textGammaafrican ..... 1560
\textgammalatinsmall ..... 1561
\textgreater ..... 1982, 2854, 2986
\textHbar ..... 1550
\texthbar ..... 1549
\textIota ..... 1274, 1413, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1525
\textiota ..... 1306, 1394, 1395, 1396, 1397, 1402, 1403, 1404, 1405, 1410, 1411, 1412, 1434, 1435, 1436, 1437, 1525
\textIotaafrican ..... 1570
\textiotalatin ..... 1571
\textKappa ..... 1276, 1526
\textkappa ..... 1308, 1526
\textKhook ..... 1562
\textkhook ..... 1563
\textLambda ..... 1277, 1527
\textlambda ..... 1309, 1527
\textless ..... 1983, 2855, 2987
\textMu ..... 1278, 1527
\textmu ..... 1310, 1527
\textNhookleft ..... 1590
\textnhookleft ..... 1591
\textNu ..... 1279, 1527
\textnu ..... 1311, 1527
\textOmega ..... 1288, 1342, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1532
\textomega ..... 1322, 1378, 1379, 1380, 1381, 1383, 1384, 1385, 1386, 1388, 1389, 1390, 1532
\textOmicron 1280, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1528
\textomicron 1312, 1422, 1423, 1424, 1425, 1430, 1431, 1432, 1433, 1528
\textOopen ..... 1568, 1595
\textoopen ..... 1569, 1596
\textoxia ..... 1249
\textoxiaiota ..... 1332
\textparenleft ..... 1250
\textparenright ..... 1251
\textpentedeka ..... 1220

\textpentehkaton . . . . . 1221
\textpentemuria . . . . . 1223
\textpenteqilioi . . . . . 1222
\textpercent . . . . . 1246
\textperiodcentered . . . . . 1247
\textperispomeniiota . . . . . 1337
\textperthousand . . . . . 1233
\textPhi . . . . . 1271, 1524
\textphi . . . . . 1303, 1524
\textPhook . . . . . 1588
\textphook . . . . . 1589
\textPi . . . . . 1281, 1528
\textpi . . . . . 1313, 1528
\textPsi . . . . . 1290, 1532
\textpsi . . . . . 1324, 1532
\textpsili . . . . . . 1263, 1329, 1348, 1364, 1380, 1396, 1400, 1420, 1424, 1444, 1450, 1460, 1468, 1478, 1488, 1502
\textpsiliiota . . . . . 1329, 1510
\textpsilioxia . . . . . 1295, 1335, 1353, 1370, 1385, 1404, 1408, 1428, 1432, 1454, 1464, 1472, 1482, 1492, 1506
\textpsilioxiaiota . . . . . 1335, 1514
\textpsiliperispomeni . . . . . 1293, 1338, 1358, 1375, 1390, 1412, 1416, 1456, 1474, 1484, 1508
\textpsiliperispomeniiota 1338, 1516
\textpsilivaria . . . . . 1296, 1333, 1354, 1376, 1386, 1405, 1409, 1429, 1433, 1452, 1462, 1470, 1480, 1490, 1504
\textpsilivariaiota . . . . . 1333, 1512
\textqoppa . . . . . 1229
\textqoppavariant . . . . . 1230
\textquestion . . . . . 1264
\textquestiondown . . . . . 1598
\textquotedbl . . . . . 1986, 2858, 2990
\textquotedblleft . . 1984, 2856, 2988
\textquotedblright . . 1985, 2857, 2989
\textquoteleft . 1236, 1987, 2859, 2991
\textquoteright 1237, 1988, 2860, 2992
\textRho . . . . . 1283, 1518, 1529
\textrho . . . . . 1315, 1443, 1444, 1529
\textsanpi . . . . . 1235
\textschwa . . . . . 1557
\textscriptg . . . . . 1540
\textsection . . . . . 3898
\textSigma . . . . . 1284, 1529, 1530
\textsigma . . . . . 1318, 1529
\textstigma . . . . . 1224
\textstigmavariant . . . . . 1225
\textsubiota . . . . . 1226, 1227, 1328, 1340, 1341, 1342
\textsuperscript . . . . . 619
\textTau . . . . . 1285, 1531
\texttau . . . . . 1319, 1531
\textTbar . . . . . 1584
\texttbar . . . . . 1585
\texttelugua . . . . . 2997, 3257
\textteluguaa . . . . . 2998, 3259
\textteluguai . . . . . 3007, 3281
\textteluguailengthmark . . . . . 3061
\textteluguanusvara . 2995, 3135, 3138
\textteluguau . . . . . 3010, 3287
\textteluguba . . . . . 3033, 3159, 3160
\texttelugubha . . . . . 3034, 3143, 3144
\texttelugublackbox . . . . . 3211, 3212
\textteluguca . . . . . 3016, 3195, 3196
\textteluguca ndrabindu . . . . . 2994, 3134, 3137
\texttelugucha . . . . . 3017, 3173, 3174
\textteluguda . . . . . 3028, 3163, 3164
\texttelugudda . . . . . 3023, 3141, 3142
\texttelugudd ha . . . . 3024, 3187, 3188
\texttelugudha . . . . . 3029, 3147, 3148
\texttelugue . . . . . 3005, 3277
\textteluguee . . . . . 3006, 3279
\textteluguei ght . . . . . 3072, 3313
\textteluguemptybox . . . . . 3213, 3214
\textteluguf ive . . . . . 3069, 3310
\textteluguf our . . . . . 3068, 3309
\textteluguga . . . . . 3013, 3201, 3202
\texttelugugha . . . . . 3014, 3185, 3186
\textteluguha . . . . . 3045, 3167, 3168
\textteluguii . . . . . 2999, 3261
\textteluguii . . . . . 3000, 3263
\textteluguja . . . . . 3018, 3175, 3176
\texttelugujha . . . . . 3019, 3165, 3166
\textteluguka . . . . . 3011, 3149, 3150
\texttelugukha . . . . . 3012, 3199, 3200
\texttelugula . . . . . 3039, 3205, 3206
\textteluguleng thmark . . . . . 3060
\texttelugulla . . . . . 3040, 3179, 3180
\textteluguma . . . . . 3035, 3153, 3154
\textteluguna . . . . . 3030, 3183, 3184
\texttelugunga . . . . . 3015, 3145, 3146
\texttelugunine . . . . . 3073, 3314
\texttelugunna . . . . . 3025, 3189, 3190
\texttelugunya . . . . . 3020, 3177, 3178
\textteluguo . . . . . 3008, 3283
\textteluguone . . . . . 3065, 3306
\textteluguoo . . . . . 3009, 3285
\textteluguoutlinebox . . . 3215, 3216
\textteluguupa . . . . . 3031, 3191, 3192
\textteluguupha . . . . . 3032, 3181, 3182

\textteluguraa . . . . . 3037, 3193, 3194
\textteluguraa . . . . . 3038, 3203, 3204
\textteluguraa . . . . . 3044, 3161, 3162
\textteluguseven . . . . . 3071, 3312
\textteluguraa . . . . . 3042, 3157, 3158
\textteluguraa . . . . . 3070, 3311
\textteluguraa . . . . . 3043, 3151, 3152
\textteluguraa . . . . . 2968, 3093
\textteluguraa . . . . . 2969, 3098
\textteluguraa . . . . . 3026, 3207, 3208
\textteluguraa . . . . . 3027, 3197, 3198
\textteluguraa . . . . . 3067, 3308
\textteluguraa . . . . . 3021, 3155, 3156
\textteluguraa . . . . 3022, 3169, 3170
\textteluguraa . . . . . 3066, 3307
\textteluguraa . . . . . 3001, 3265
\textteluguraa . . . . . 3002, 3267
\textteluguraa . . . . . 3041, 3209, 3210
\textteluguraa . . . . . . 3059, 3108, 3133, 3142, 3144, 3146, 3148, 3150, 3152, 3154, 3156, 3158, 3160, 3162, 3164, 3166, 3168, 3170, 3172, 3174, 3176, 3178, 3180, 3182, 3184, 3186, 3188, 3190, 3192, 3194, 3196, 3198, 3200, 3202, 3204, 3206, 3208, 3210, 3212, 3214, 3216
\textteluguraa . . 2996, 3136, 3139
\textteluguraa . . . . . 3004, 3271
\textteluguraa . . . . 3063, 3275
\textteluguraa . . . . . 3003, 3269
\textteluguraa . . . . 3062, 3273
\textteluguraa . . . . . 3256
\textteluguraa . . . . . 3046, 3258
\textteluguraa . . . . . 3055, 3280
\textteluguraa . . . . . 3058, 3286
\textteluguraa . . . . . 3053, 3276
\textteluguraa . . . . . 3054, 3278
\textteluguraa . . . . . 3047, 3260
\textteluguraa . . . . . 3048, 3262
\textteluguraa . . . . . 3056, 3282
\textteluguraa . . . . . 3057, 3284
\textteluguraa . . . . . 3049, 3264
\textteluguraa . . . . . 3050, 3266
\textteluguraa . . . . . 3270
\textteluguraa . . . . . 3274
\textteluguraa . 3051, 3268
\textteluguraa 3052, 3272
\textteluguraa . . . . . 3036, 3171, 3172
\textteluguraa . . . . . 3064, 3305
\texttesh . . . . . 1592
\textTheta . . . . . 1275, 1526
\texttheta . . . . . 1307, 1526
\textThook . . . . . 1578
\textthook . . . . . 1579
\textTretroflexhook . . . . . 1566
\texttretroflexhook . . . . . 1567
\texttt . . . . . 250
\textunderscore . . . . 1989, 2861, 2993
\textunicodechar . . . . . 3581, 3582
\textUpsilon . . . . 1286, 1417, 1494, 1495, 1496, 1497, 1498, 1499, 1531
\textupsilon . . . . . 1320, 1398, 1399, 1400, 1401, 1406, 1407, 1408, 1409, 1414, 1415, 1416, 1438, 1439, 1440, 1441, 1531
\textvariaiota . . . . . 1331
\textvarsigma . . . . . 1300, 1530
\textVhook . . . . . 1586
\textvhook . . . . . 1587
\textXi . . . . . 1289, 1532
\textxi . . . . . 1323, 1532
\textYhook . . . . . 1574
\textyhook . . . . . 1575
\textZeta . . . . . 1291, 1533
\textzeta . . . . . 1325, 1533
\thaiAngkhankhu . . . . . 2947
\thaiBoBaimai . . . . . 2887
\thaiChoChan . . . . . 2869
\thaiChoChang . . . . . 2871
\thaiChoChing . . . . . 2870
\thaiChoChoe . . . . . 2873
\thaiDoChada . . . . . 2875
\thaiDoDek . . . . . 2881
\thaieight . . . . . 2945
\thaifive . . . . . 2942
\thaiFoFa . . . . . 2890
\thaiFoFan . . . . . 2892
\thaiFongman . . . . . 2936
\thaifour . . . . . 2941
\thaiHoHip . . . . . 2904
\thaiHoNokhuk . . . . . 2907
\thaiKhoKhai . . . . . 2863
\thaiKhoKhon . . . . . 2866
\thaiKhoKhuat . . . . . 2864
\thaiKhoKhwai . . . . . 2865
\thaiKhomut . . . . . 2948
\thaiKhoRakhang . . . . . 2867
\thaiKoKai . . . . . 2862
\thaiLakkhangyao . . . . . 2926
\thaiLoChula . . . . . 2905
\thaiLoLing . . . . . 2898
\thaiLu . . . . . 2899
\thaiMaiChattawa . . . . . 2932
\thaiMaiEk . . . . . 2929
\thaiMaiHanakat . . . . . 2910
\thaiMaitaikhu . . . . . 2928
\thaiMaiTho . . . . . 2930

\thaiMaiTri . . . . . 2931
\thaiMaiyamok . . . . . 2927
\thaiMoMa . . . . . 2894
\thaiNgoNgu . . . . . 2868
\thaiNikhahit . . . . . 2934
\thainine . . . . . 2946
\thaiNoNen . . . . . 2880
\thaiNoNu . . . . . 2886
\thaiOAng . . . . . 2906
\thaione . . . . . 2938
\thaiPaiyannoi . . . . . 2908
\thaiPhinthu . . . . . 2919
\thaiPhoPhan . . . . . 2891
\thaiPhoPhung . . . . . 2889
\thaiPhoSamphao . . . . . 2893
\thaiPoPla . . . . . 2888
\thaiRoRua . . . . . 2896
\thaiRu . . . . . 2897
\thaiSaraA . . . . . 2909
\thaiSaraAa . . . . . 2911
\thaiSaraAe . . . . . 2922
\thaiSaraAiMaimalai . . . . . 2925
\thaiSaraAiMaimuan . . . . . 2924
\thaiSaraAm . . . . . 2912
\thaiSaraE . . . . . 2921
\thaiSaraI . . . . . 2913
\thaiSaraIi . . . . . 2914
\thaiSaraO . . . . . 2923
\thaiSaraU . . . . . 2917
\thaiSaraUe . . . . . 2915
\thaiSaraUee . . . . . 2916
\thaiSaraUu . . . . . 2918
\thaiseven . . . . . 2944
\thaisix . . . . . 2943
\thaiSoRusi . . . . . 2902
\thaiSoSala . . . . . 2901
\thaiSoSo . . . . . 2872
\thaiSoSua . . . . . 2903
\thaiThanthakhat . . . . . 2933
\thaiThoNangmontho . . . . . 2878
\thaiThoPhuthao . . . . . 2879
\thaiThoThahan . . . . . 2884
\thaiThoThan . . . . . 2877
\thaiThoThong . . . . . 2885
\thaiThoThung . . . . . 2883
\thaithree . . . . . 2940
\thaiToPatak . . . . . 2876
\thaiToTao . . . . . 2882
\thaitwo . . . . . 2939
\thaiWoWaen . . . . . 2900
\thaiYamakkan . . . . . 2935
\thaiYoYak . . . . . 2895
\thaiYoYing . . . . . 2874
\thaizero . . . . . 2937
\the . . . . . 232, 487, 489, 496, 507, 508, 520, 525, 531, 648, 652, 659, 755, 758, 760, 872, 877, 879, 890, 932, 1539, 1627, 1632, 1637, 1642, 1712, 3111, 3123, 3129, 3634, 3635
\thr@@ . . . . . 1163, 1188
\tlcbb . . . . . 3159, 3160
\tlcbbb . . . . . 3211, 3212
\tlcbbh . . . . . 3143, 3144
\tlcbc . . . . . 3195, 3196
\tlcbch . . . . . 3173, 3174
\tlcbD . . . . . 3141, 3142
\tlcbd . . . . . 3163, 3164
\tlcbDh . . . . . 3187, 3188
\tlcbdh . . . . . 3147, 3148
\tlcbeb . . . . . 3213, 3214
\tlcbg . . . . . 3201, 3202
\tlcbgh . . . . . 3185, 3186
\tlcbH . . . . . 3167, 3168
\tlcbj . . . . . 3175, 3176
\tlcbjh . . . . . 3165, 3166
\tlcbk . . . . . 3149, 3150
\tlcbkh . . . . . 3199, 3200
\tlcbL . . . . . 3179, 3180
\tlcbl . . . . . 3205, 3206
\tlcbm . . . . . 3153, 3154
\tlcbN . . . . . 3189, 3190
\tlcbn . . . . . 3183, 3184
\tlcbNG . . . . . 3145, 3146
\tlcbnx . . . . . 3177, 3178
\tlcbob . . . . . 3215, 3216
\tlcbp . . . . . 3191, 3192
\tlcbph . . . . . 3181, 3182
\tlcbR . . . . . 3203, 3204
\tlcbr . . . . . 3193, 3194
\tlcbS . . . . . 3157, 3158
\tlcbs . . . . . 3161, 3162
\tlcbSh . . . . . 3151, 3152
\tlcbT . . . . . 3155, 3156
\tlcbt . . . . . 3207, 3208
\tlcbTh . . . . . 3169, 3170
\tlcbth . . . . . 3197, 3198
\tlcbv . . . . . 3209, 3210
\tlcbY . . . . . 3171, 3172
\tluaas . . . . . 3134, 3137
\tluasu . . . . . 3135, 3138
\tluavi . . . . . 3136, 3139
\tlvoA . . . . . 3258, 3259
\tlvoa . . . . . 3092, 3094, 3256, 3257
\tlvoE . . . . . 3278, 3279
\tlvoe . . . . . 3276, 3277
\tlvoI . . . . . 3262, 3263
\tlvoi . . . . . 3260, 3261

\tlvoLx . . . . . 3274, 3275
\tlvolx . . . . . 3270, 3271
\tlvoO . . . . . 3284, 3285
\tlvoo . . . . . 3282, 3283
\tlvoow . . . . . 3286, 3287
\tlvoRx . . . . . 3272, 3273
\tlvorx . . . . . 3268, 3269
\tlvoU . . . . . 3266, 3267
\tlvou . . . . . 3264, 3265
\tlvoX . . . . . 3096, 3097, 3098, 3133
\tlvoy . . . . . 3280, 3281
\tobe . . . . . 423
\toks . . . . . 646, 648, 652, 659, 753, 755, 756, 758, 760, 1539, 1627, 1632, 1637, 1642, 3111, 3123, 3129
\tracingassigns . . . . . 1061
\tracingonline . . . . . 1061
\tsadi . . . . . 3708
\tsere . . . . . 3687
\tsh . . . . . 1592
\tw@ . . . . . 874, 888, 1165, 1168, 1179
\typein . . . . . 750
\typeout . . . . . 226, 237, 507, 531, 607, 668, 757, 1083, 1169, 1537, 1539, 1542, 1547, 1600, 1627, 1632, 1637, 1642, 1674, 1775, 1780, 1798, 1801, 1895, 3111, 3123, 3129, 3539, 3632, 3634, 4389

## U

\U . . . . . 278, 1101, 3892, 4298
\u . . . . . 1012, 1238, 1937, 3885
\uc@char@notloaded . . . . . 259, 264, 265, 536, 911
\uc@check@magicglue . . . 477, 493, 521
\uc@checkopt@change . . . . . 289
\uc@checkopt@error . . . . . 285, 289
\uc@checkopt@errorstick . . . . . 289
\uc@checkopt@stick . . . . . 289
\uc@checkopts . . . . . 268, 284
\uc@cmb . . . . . 170, 172, 176, 520
\uc@comb@code . 478, 479, 481, 482, 528
\uc@combine . . . . . 445, 516
\uc@combining@prechar . . . . . 478
\uc@combtoks . . . . . 473, 489, 490, 496, 522, 525, 529, 531
\uc@combtoksb . . . . . 473, 484, 488, 507, 508, 510
\uc@dclc . . . . . 590, 647
\uc@embedfont@enc . . . . . 809, 816
\uc@embedfont@fontstart . . . . . 812, 813, 818, 825, 828, 833
\uc@embedfont@num . 819, 827, 830, 834
\uc@embedfont@option .. 814, 820, 840
\uc@embedfont@start . . . . . 810, 817, 822, 826, 835, 842
\uc@errordrawopt . . . . . 354, 381, 407
\uc@errormsg . . . . . 121, 145, 823, 894
\uc@firstofmany . . . . . 520, 762
\uc@got . . . . . 455, 512, 564, 595, 634, 647, 649, 730, 731, 751, 755
\uc@inputencoding . . . . . 781, 786
\uc@localdeferr . . . . . 293, 324, 460
\uc@magic@glue 178, 491, 492, 494, 532
\uc@newcommand . . . . . 117, 118, 119, 121, 129, 152, 153, 188, 189, 212, 248, 251, 281, 284, 288, 290, 321, 352, 379, 408, 442, 458, 460, 469, 476, 493, 502, 504, 516, 536, 575, 582, 584, 588, 590, 592, 606, 619, 620, 622, 624, 626, 628, 630, 632, 665, 669, 670, 673, 676, 680, 728, 729, 748
\uc@notloaderr 258, 260, 263, 265, 281
\uc@output 295, 326, 436, 442, 503, 4415
\uc@prechar . . . . . 459
\uc@prechar@exec .. 447, 458, 480, 509
\uc@read@definition 740, 744, 745, 752
\uc@secondtry . . . . . 211, 540, 541, 571
\uc@spacechar . . . . . 869, 871
\uc@spc . . . . . 210, 301, 305, 332, 336, 359, 363, 386, 390, 417, 418, 424, 430, 432, 548, 553, 621, 623, 625, 627, 629, 631, 643, 664, 758, 869, 960, 1094
\uc@temp@a . . . . . 154, 155, 158, 461, 466, 496, 497, 503, 538, 539, 549, 560, 562, 566, 591, 603, 607, 610, 614, 798, 800, 836, 841, 871, 882, 886, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1179, 1180, 1188, 1189, 1193, 1196, 1198, 1200, 3086, 3087, 3089, 3564, 3565, 4372, 4375, 4378, 4381, 4384, 4388, 4389
\uc@temp@b 222, 223, 231, 237, 238, 411, 418, 424, 430, 542, 548, 553, 1201, 1216, 1538, 1543, 1548
\uc@temp@c . . . . . 225, 240, 428, 435, 733, 735, 741, 1158, 1176, 1185
\uc@temp@d . . . . . 240, 249, 250, 1601
\uc@tempa . . . . 113, 115, 764, 765, 784
\uc@tempb . . . . . 784
\uc@temptokena . . . . 473, 479, 480, 489
\uc@text@composite .. 1210, 1213, 1214
\uc@throw . . . . . 454, 455, 511, 512

\uc@vbsetchar . . . . . 848, 857, 860, 861
\uc@warn@nocombine . . . . 172, 176, 469
\uc@warnmsg . . . . . 129, 183
\uccode . . . . . 850, 1011, 1012, 1042
\ucs@parse@UTFviii@a . . . . . 918, 922
\ucs@parse@UTFviii@b . . . . . 919, 923
\ucs@parse@XML@charref . . . . 917, 921
\ucs@protected@unichar . . . . . 252, 671, 674, 677
\ucshyper@directfalse . . . . . 4357
\ucshyper@directtrue . . . . 4356, 4358
\ucshyper@old@pdfstringdef 4410, 4428
\ucshyper@prerenderfalse . . . . . 4359
\ucshyper@prerendertrue . 4355, 4360
\UCSProtectionIeC . . . . . 670
\UCSProtectionNone . . . . . 670
\UCSProtectionUnichar . . . . . 670
\UCSPU . . . . . 4364, 4393, 4417, 4432
\ucspu@err . . . . . 4392, 4401
\UCSPU@tmp . . . . . 4363, 4365
\UCSPUrange . . . . . 4429, 4435
\Umathchar . . . . . 5
\undefined . . . . . 2, 5, 6, 42, 43, 44, 45, 46, 47, 48, 49, 52, 64, 70, 82, 83, 91, 95, 96, 97, 122, 130, 138, 160, 171, 173, 177, 182, 215, 217, 448, 454, 455, 459, 478, 479, 482, 511, 512, 608, 732, 740, 744, 763, 766, 793, 796, 808, 816, 817, 819, 822, 827, 886, 897, 900, 901, 908, 949, 950, 951, 953, 956, 1106, 1140, 1152, 1161, 1190, 1196, 1204, 1317, 1519, 1677, 1678, 1689, 1693, 1702, 1707, 1709, 1715, 1733, 1747, 1755, 1763, 1785, 1794, 1900, 1909, 3503, 3504, 3550, 3554, 4349, 4366
\uni@activate@option . . 109, 111, 137
\uni@char . . . . . 251, 572, 618
\uni@dataloaded . . . . . 138, 567, 579
\uni@declcharopt . . 591, 593, 598, 606
\uni@resetcatcodes . . . . . 231, 565, 578, 637, 680, 749
\unichar . . 273, 439, 534, 583, 618, 857, 860, 872, 877, 926, 953, 1005, 1028, 4398, 4399, 4414, 4417
\unicode@charfilter . . . 448, 451, 669
\unicode@combine . . 213, 476, 504, 527
\unicode@delay . . . . . 443
\unicode@empty . . . . . 407, 409, 410
\unicode@error@unknown 417, 547, 727
\unicode@error@unknown@ . . . 728, 729
\unicode@graphicscmd . . . . . 217, 218, 226, 227, 243
\unicode@graphicsdir . . 215, 216, 223
\unicode@invalid 212, 467, 555, 737, 744
\unicode@invalidglyph . 246, 247, 248
\unicode@knownoptions . . . . . 99, 114
\unicode@numtohex . . . . . 188, 219, 222, 249, 411, 542
\unicode@numtohex@ . . . . . 188, 189
\unicode@read@definition . . . 739, 748
\UnicodeCharFilter . . . . . 586, 669, 672, 675, 678
\unicodecircle . . . . . 619
\unicodecombine . . . . . 171, 174, 504, 514, 860, 861, 872
\UnicodeEmbedFont . . . . . 805, 807
\unicodesmall . . . . . 619
\unicodesquare . . . . . 619
\unicodesub . . . . . 619
\unicodesuper . . . . . 619
\unicodevertical . . . . . 619
\unicodevirtual . . . 238, 246, 247, 502
\unicodewide . . . . . 619
\unistring . . . . . 868, 885
\univerb . . . . . 847, 851
\unskip . . . . . 494
\uo-prio-infinity . . . . . 288
\update@uclc@with@text . . . . . 1520, 1534, 1535
\uppercase . . . . . 850, 1013, 1043
\usepackage . . . . . 773, 774, 777, 954
\utf@viii@ . . . . . 1111, 1120
\utf@viii@err . . . . . 959, 962, 972, 979, 980, 989, 990, 991, 1046
\utf@viii@make . 1006, 1034, 1035, 1036
\utf@viii@map . . . . . 608, 609, 1003, 1049, 4366, 4367
\utf@viii@undef . . . . . 968, 1024, 1026
\utf@viii@undeferr . . . . . 1018, 1023, 1025, 1104
\utf@viii@xnum . . . . . 962, 972, 979, 980, 989, 990, 991
\UTFviii@loop . . . . . 23, 29, 35
\UTFviii@tmp . . . . . 20, 26, 32, 932, 936

## V

\v . . . . . 1938, 3884
\vavyod . . . . . 3673
\verb@balance@group . . . . . 865
\verb@egroup . . . . . 863
\vwlA . . . . . 3684, 3689
\vwlCOLON . . . . . 3683, 3684, 3685
\vwlE . . . . . 3683, 3687, 3688
\vwlI . . . . . 3686, 3687

\vwlPLUS . . . . . 3685, 3690
\vwlSHEVA . . . . . 3682
\vwlU . . . . . 3691
\vwlVERT . . . . . 3692

**W**

\w . . . . . 1939
warnunknown (option) . . . . . 161
\wlog . . . . . 1175, 1184
\write . . . . . 227

**X**

\XDeclareUnicodeOption . . . . . 99, 169
\xdef . . . . . 202, 528, 636, 653, 1692, 1705, 1713, 3513, 3522, 3530, 3565, 3625, 4387

**Y**

\y . . . . . 1940

**Z**

\Z . . . . . 719
\z . . . . . 720

# Change History

v1.99
General: Last version by Dominique Unruh . . . . . 1
v2.0
General: Added mathletters mappings for variants of greek small letters . . . . . 1
Added support for various symbols . . . . . 1
Changed the mathletters mappings of some greek small letters from \var*letter* to *letter* in order to conform to the Unicode standard . . . . . 1
Created makefile . . . . . 1
Removed the redefinition of \show from ucsencs.def . . . . 48
Switched from \mathbbm to \mathbb for double-struck characters . . . . . 1
Switched to LPPL 1.3 . . . . . 1
Various small improvements . . . 1
v2.1
General: Added support for various arrows, musical notes, and NON-BREAKING HYPHEN . . 1
Some small bug fixes . . . . . 1
v2.2
General: Fixed a bug related to the optional definition of \@ifnextchar (see http://tinyurl.com/dxncfn9) . . . . 1