

# Greek and hyperref

September 4, 2015

On 2010-11-05, Heiko Oberdiek wrote in comp.text.tex:

```
\pdfstringdef (converting TeX code to PDF strings for bookmarks)
supports NFSS2 and needs active characters. Encoding stuff based
on the internal font machinery of TeX (letters with catcode 11 or
12, ligatures) does not work, because the strings don't reach TeX's
stomach.
```

The *greek-fontenc* package allows input of Greek characters in a way that “reaches TeX’s stomach” and hence works in both, the main document as well as in PDF strings (e.g. bookmarks). Hyperref’s “puenc.def” font encoding file defines LICR macros for monotonic Greek (Greek characters of the “Greek and Coptic” unicode block).

All utf8-encoded literal Unicode characters work in PDF strings. With *greek-fontenc* and *greek-inputenc*, this enables use of all Greek character in text and PDF strings.

## 1 Transcription: λογος, λογος

`\textgreek + LGR` transcription or Greek language (babel) + LGR transcription: In the PDF-bookmark are Latin letters instead of Greek ones.

## 2 Macros: λογος, λογος, λογος

`textalpha` package with `\textgreek*` macros, `alphabetalpha` package with `\alpha ... \Omega` macros, and literal Greek Unicode characters.

Works, if the “unicode” or “pdfencoding=auto” option is given to hyperref. (With the “xpdf” viewer, Greek letters are not shown in PDF bookmarks.)

The generic short macros from the *alphabetalpha* package result in hyperref warnings. See “alphabetalpha-doc.tex” and “alphabetalpha-doc.pdf” from the ‘lgrx’ package for details an workarounds.

## 3 LGR + Macros: λογος

LICR-macro input works also if the font encoding is LGR.

4 Kerning: AΥΛ AΥΛ AΥΛ

Kerning is impossible if the font encoding is switched for every single character. Wrap the Greek part in a command switching to LGR font encoding to fix this, either `\ensuregreek{...}` (with package `textalpha`) or `\foreignlanguage{greek}{...}` (with `babel`).

## 5 Literal Unicode input

The following subsection headings contain all characters from the “Greek and Coptic” and “Greek Extended” Unicode Blocks that are supported by the LGR font encoding as literal Unicode characters.

5.1 ' ; ' ' A ' E ' H ' T ' O ' Y ' Ω ' ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪΫϐϑϕϗ

5.2 άέήίύαβγδεζηθικλμνξοπρςστυφχψωïüóώøƒƒʒ

5.3     $\alpha\alpha\alpha\alpha\alpha\alpha\alpha\alpha$  A'A'A'A'A'A'A'A     $\epsilon\epsilon\epsilon\epsilon\epsilon\epsilon\epsilon\epsilon$  E'E'E'E'E'E'E'E

**5.4**    နံနံနီနီနီနီနီ H`H`H`H`H`H`H`H    လေးလေး I I I I I I I I

5.5 000000'0'0'0'0'0 000000'0'0'0'0'0

[illegible]

5.7     $\alpha\alpha\alpha\alpha\alpha\alpha\alpha\alpha A_I A_I A_I A_I A_I A_I A_I A_I$      $\eta\eta\eta\eta\eta\eta\eta\eta H_I H_I H_I H_I H_I H_I H_I H_I$

[illegible]

5.9     $\tilde{\eta}\eta\acute{\eta}\tilde{\eta}\tilde{E}'E'H'HH_I \quad \overline{\text{III}}\tilde{\text{II}}\bar{\text{I}}'\text{I}'$

[illegible]

## 6 non-standard and combined diacritics: $\grave{\alpha}\acute{\alpha}$

Currently, there is no hyperref support for LICR input with non-standard accents or combined diacritics characters. Input as literal precomposed Unicode character works fine.

## 7 Makeuppercase

According to Greek typesetting conventions, diacritics (except the dialytika) are dropped in ALL CAPS.

However, `\Makeuppercase` is not supported in PDF-strings, so we do not need to care for this.

## 8 Conclusion

For Greek text parts in section headers use either literal Unicode characters or macros. For multi-accented letters or non-standard accents, use literal pre-composed Unicode characters. (Combining Unicode characters do not work with inputenc and 8-bit LaTeX. This is a general restriction.)

For proper kerning in the main document, combine this with the `\textgreek` or `\foreignlanguage{greek}` macros.