

# Test the Greek support for Babel

The babel option “greek” activates the support for the Greek language defined in the file “greek.ldf” (source “greek.dtx”).

## 1 Language Switch

The declaration `\selectlanguage` switches between languages.

Τί φήεις· Ἰδὼν ἐνθ' ἔδε παῖδ' ἐλευθέραν τὰς πλησίον Νύμφας στεφανο-  
ῦσαν, Σώστρατε, ἐρῶν ἀπ' ἡλθεῖς εὐθύς·

The macro `\foreignlanguage` sets its second argument in the specified language. This is intended for short text parts like Βιβλιοθήκη.

## 2 Font Encoding

In Greek text parts, the font encoding is automatically set to LGR if an 8-bit TeX engine is used. (See test-unicode-greek.tex for usage of babel-greek with XeTeX or LuaTeX.)

LGR has Greek characters in the slots reserved in a TeX *standard text font encoding*. This means you need an explicit font encoding change for every Latin letter and some other symbols if the current font encoding is LGR.

The Babel core defines the declaration `\latintext` and the command `\textlatin` to switch to the T1 or OT1 font encoding or typeset the argument using this encoding.

Switching to a font encoding supporting the Greek script is possible without switching the Babel language using the declarations `\greekscript` or `\greektext` (always LGR) and the macros `\ensuregreek` or `\textgreek`. These commands do not start a new paragraph:

Φίλων τοῦ TeX (EΦT) – Friends (Φίλων) of TeX.

“greek.ldf” has some workarounds, so that macros relying on Latin characters in the “right” positions keep working. We test, that these definitions do not overwrite the selection of pre-composed characters for “copyright” and “registered trade mark” by “textcomp” (try copy and paste from the PDF output):

Greek (LGR): A & Ω, © ® ™, © ® ™

Latin: A & O.

To prevent Roman numerals being typeset in Greek letters we need to adopt the internal LaTeX commands. Note that this may cause errors when roman numerals are used in a situation where the macros need to be expanded:

Greek: i, ii, iii, iv, . . . , mcmlxxv I, II, III, IV, . . . , MCMLXXV

Latin: i, ii, iii, iv, . . . , mcmlxxv I, II, III, IV, . . . , MCMLXXV

### 3 MakeUppercase, MakeLowercase

Capital Greek letters have diacritics (except the dialytika and sub-iota) to the left (instead of above) and drop them in uppercase, e.g. μαῖστρος  $\mapsto$  ΜΑΪΣΤΡΟΣ.

Upcased letters with diacritics keep the dialytika. This is implemented for all input variants of diacritics with dialytika. (Babel has “composite command” definitions to ensure this also works for accent characters "upcased" to the character No 159.)

[illegible]

Tonos and dasia mark a *hiatus* (break-up of a diphthong) if placed on the first vowel of a diphthong (άι, άυ, έι, άυ, έι). A dialytika must be placed on the second vowel if they are dropped: (Αῖ, Αῦ, Εῖ, Αῖ, Αῦ, Εῖ).

ἄνυλος  $\mapsto$  AŲΛOΣ, ἄνυλος  $\mapsto$  AŲΛOΣ, μάινα  $\mapsto$  MAĬNA, κείκ,  $\mapsto$  KEĬK ἄνυνία  $\mapsto$  AŲΠNIA

There are several alternative styles for the capitalized sub-iota.

The following subsections test `MakeUppercase` and `MakeLowercase` with all characters defined in `lgrenc.dfu`:

### 3.1 Greek and Coptic

### Characters of the Greek and Coptic Unicode Block:

’; ‘A·EHTO’ΥΩΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪΫΡΤΦΛ  
άέήίϋάβγδεζηθικλμνξοπρστυφχψωϊϋόύώϑϕϗ

MakeUppercase:

'A·EHIOYΩIABΓΔEZHΘIKAMNΞOΠPΣTYΦXΨΩIΨYTFΛ  
 AEHIYABΓΔEZHΘIKAMNΞOΠPΣSTYΦXΨΩIΨOYΩYTFΛ

Letters and sub-iota upcased, other diacritics except dialytika dropped.

There is no capital Koppa in LGR, therefore  $\mathfrak{k}$  is left unchanged with MakeUp-percase.

MakeLowercase:

':; 'ά-έήίούώϊάβγδεζηθικλμνξοπρστυφχψωϊϋϑϕζλ  
άέήίύάβγδεζηθικλμνξοπρστυφχψωϊϋούώϑϕζλ

The lowercase of `\Sigma` is the «auto-sigma» (`\textautosigma`):  $\Sigma\Sigma \mapsto \sigma\varsigma$ . Add a `ZWNJ` or use the `\noboundary` macro to prevent conversion to final sigma:  $\sigma\sigma$ . The lowercase of `\text{GREEK LETTER STIGMA}`  $\Upsilon$  is  $\varsigma$  not `\text{textvarstigma}` ( $\xi$ ).

### 3.2 Greek extended

Characters of the Greek extended Unicode block:

Ǻ ǻ Ǽ ǽ ǿ Ǿ ǿ ǿ Å Å ˆA ˆA ˆA ˆA ˆA ˆA ˆA ˆA  
 È É Ê Ë Ì Í Î Ï Ñ Ñ ˆE ˆE ˆE ˆE ˆE ˆE

[illegible]

## 4 Babel Strings

Babel defines macros for several autogenerated strings so that they may appear in the choosen language. babel-greek uses LICRs in order to let the string macros work independent of the font encoding, in both 8-bit and Unicode-aware TeX.

### 4.1 Captions

Προοίμιον, Ἀναφοραὶ, Περίληψις, Βιβλιογραφία, Κεφάλαιον, Παράρτημα, Περιεχόμενα, Κατάλογος σχημάτων, Κατάλογος πινάκων, Εύρετήριο, Σχῆμα, Πίναξ, Μέρος, Συνημμένως, Κοινοποίησις, Πρὸς, Σελίς, ὅρα, ὅρα ὡσαύτως, Ἀπόδειξις, Γλωσσάριον,

### 4.2 Months

4 Ἰανουαρίου 2014  
4 Φεβρουαρίου 2014  
4 Μαρτίου 2014  
4 Ἀπριλίου 2014  
4 Μαΐου 2014  
4 Ἰουνίου 2014  
4 Ἰουλίου 2014  
4 Αὐγούστου 2014  
4 Σεπτεμβρίου 2014  
4 Ὀκτωβρίου 2014  
4 Νοεμβρίου 2014  
4 Δεκεμβρίου 2014

## 5 Greek Numerals

See greek.pdf for the formation rules of Greek numerals. Some examples:

α', β', γ', δ', ε', ς', ζ', η', θ', ι', ια', ιβ', κ', τμς', φ', ,αλφζ', ,βιγ',

A', B', Γ', Δ', E', Γ', Z', H', Θ', I', IA', IB', K', TME', Φ', ,ΑΛΦΖ', ,ΒΙΓ',

Enumerated lists use Greek numerals in the second and fourth level:

1. Item 1
  - (α') Item 1.1
    - i. Item 1.1.1
      - A'. Item 1.1.1.1
      - B'. Item 1.1.1.2
    - ii. Item 1.1.2