Test the Greek support for Babel

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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 φήις; Ίδὼν ἐνθέδε παῖδ' ἐλευθέραν τὰς πλησίον Νύμφας στεφανοῦσαν, Σώστρατε, ἐρῶν ἀπῆλθες εὐθύς;

The macro \foreignlanguage sets its second argument in the specified language. This is intended for short text parts or single words like Βιβλιοθήχη.

There should be no inserted space before or after the language switch (may happen if there are unescaped linebreaks in the font or language definitions):

Change script with ensuregreek: $|\delta o \tilde{v} \lambda o \zeta|$. Change language with $|\delta o \tilde{v} \lambda o \zeta|$.

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 (no switch if the current encoding supports Greek script (e.g. the Unicode font encodings EU1, EU2)) or \greektext (always switch to LGR) and the corresponding macros \ensuregreek or \textgreek. These commands do not start a new paragraph:

Φίλων τοῦ TeX (ΕΦΤ) – 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 & \Omega, © ® TM, © ® TM 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

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

```
\texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}} \texttt{\texttt{\texttt{T}}
```

Tonos and dasia mark a *hiatus* (break-up of a diphtong) if placed on the first vowel of a diphtong ($\acute{\alpha}$ l, $\acute{\alpha}$ l, $\acute{\alpha}$ l, $\acute{\alpha}$ l, $\acute{\alpha}$ l). A dialytika must be placed on the second vowel if they are dropped: (AÏ, AŸ, EÏ, AÏ, AŸ, EÏ).

άυλος \mapsto ΑΫ́ΛΟΣ, ἄυλος \mapsto ΑΫ́ΛΟΣ, μάινα \mapsto ΜΑΪΝΑ, κέικ, \mapsto ΚΕΪΚ ἀυπνία \mapsto ΑΫ́ΠΝΙΑ

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

In order to let the Up/Downcasing work also with the Latin transcription defined by the LGR font encoding, "babel-greek" also defines lc/uccodes for non-standard assignments:

```
', ", `, `, `, \mapsto, ", , , \dots
```

The uppercase of the zero-width space at the place of "v" is kept to point to the glyph at the position of "V", the Dasia-Oxia accent ("):

greek-1.3i 2000/10/02: uc code of 'v' is switched to V so that mixed text appears correctly in headers.

Use \textcompwordmark: not $\alpha \cup \mapsto A^{\circ} \Upsilon$ but $\alpha \cup \mapsto A \Upsilon$

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:

΄,; ΄ "Α·ΕΉΤΟ Υ΄ΩΐΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪΫΫΓΕ άξή(ὑαβγδεζηθικλμνξοπρςστυφχψωϊϋόύώγς [-]- λ

MakeUppercase:

΄͵; ¨Α·ΕΗΙΟΥΩΪΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩΪϔΫΩΓΓΑ ΑΕΗΙϔΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΣΤΥΦΧΨΩΪϔΟΥΩΩΩΓΓ_ΙΑ

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

There is no capital Koppa in LGR, therefore $\mbox{\ensuremath{\square}}$ is left unchanged with Make Uppercase.

MakeLowercase:

The lowercase of Σ 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 GREEK LETTER STIGMA Γ is τ not \textvarstigma (τ).

3.2 Greek extended

Characters of the Greek extended Unicode block:

${\bf Make Upper case:}$

MakeLowercase:

ἀ ά ἃ ἃ ἄ ἄ ἄ ἄ ἀ ά ἃ ἃ ἃ ἄ ἄ ἄ ήἡἣἣἤἤἤήἡἣἣἤἤήή 117777711177777711 ở ố ổ ổ ở ở ở ổ ổ ổ ở ở 0ὰάὲέἡἡὶίὸόὺὑὼώ $\mathring{\alpha} \ \mathring{\alpha} \ \mathring{\alpha}_1 \ \mathring{\alpha}_1$ $\mathring{\eta} \ \mathring{\eta} \ \mathring{\eta}_{\rm I} \ \mathring{\eta}_{\rm I}$ ααὰαάαᾶᾶααὰαα_{ι°ι} $^{\sim}$ $^{\sim}$ ĭīîîîîïīiīī Ծυδόφρουσυνόρ**` $\grave{\omega}\;\omega\;\check{\omega}\;\check{\widetilde{\omega}}\;\check{\widetilde{\omega}}\;\grave{\delta}\;\delta\;\check{\omega}\;\check{\omega}\;\omega_{\scriptscriptstyle \rm I}$

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, Άναφοραὶ, Περίληψις, Βιβλιογραφία, Κεφάλαιον, Παράρτημα, Περιεχόμενα, Κατάλογος σχημάτων, Κατάλογος πινάχων, Εὐρετήριον, Σχῆμα, Πίναξ, Μέρος, Συνημμένως, Κοινοποίησις, Πρὸς, Σελὶς, ὂρα, ὂρα ὧσαύτως, Ἀπόδειξις, Γλωσσάριον,

4.2 Months

7 Ίανουαρίου 2016 7 Φεβρουαρίου 2016

- 7Μαρτίου 2016
- 7 Άπριλίου 2016
- 7 Μαΐου 2016
- 7 Ίουνίου 2016
- 7 Ίουλίου 2016
- 7 Αὐγούστου 2016
- 7 Σεπτεμβρίου 2016
- 7 Όκτωβρίου 2016
- 7 Νοεμβρίου 2016
- 7 Δεκεμβρίου 2016

5 Greek Numerals

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

$$\alpha',\,\beta',\,\gamma',\,\delta',\,\epsilon',\,\tau',\,\zeta',\,\eta',\,\vartheta',\,\iota',\,\iota\alpha',\,\iota\beta',\,\varkappa',\,\tau\mu\epsilon',\,\phi',\,\,{}_{,}\alpha^{\lambda}\gamma\zeta',\,\,{}_{,}\beta\iota\gamma',$$

$$A',\,B',\,\Gamma',\,\Delta',\,E',\,\Pi',\,Z',\,H',\,\Theta',\,I',\,IA',\,IB',\,K',\,TME',\,\Phi',\,\text{,Amgz'},\,\text{,BIf'},$$

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