The StoneIPA package

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July 11, 2018

1 About

Stone Sans Phonetic is an excellent IPA font designed by Sumner Stone in the 1980s. It harmonizes well with its companions Stone Serif and Stone Sans, and also with a number of other popular text fonts.

It remains commercially available, but in an idiosyncratic pre-Unicode encoding.

This package — designed for use with XeLaTeX — sets up Stone Sans as the sans-serif document font, and sets up the Unicode characters in the IPA range so that they will produce the correct glyphs from Stone Sans Phonetic. It does not include the fonts themselves, which must be purchased separately.

2 Requirements

StoneIPA requires XeLaTeX, fontspec, newunicodechar, and pdftexcmds. It also requires the fonts Stone Sans, Stone Sans Phonetic and Stone Sans Phonetic Alternates.

3 Package options

StoneIPA uses your system installed versions of Stone Sans, Stone Sans Phonetic, and Stone Sans Phonetic Alternates. By default, it expects these fonts to be installed under

p	b					t	d		ʈ	ɖ	c	ɟ	k	g	q	ɢ			ʔ
þ	ɓ					ƭ	ɗ				ƈ	ʄ	ƙ	ɠ	ɗ	ʛ			
	m		ɱ			n			ɳ		ɲ		ŋ		ɴ				
	ʙ					r							ʀ						
						ɾ			ɽ										
ɸ	β	f	v	θ	ð	s	z	ʃ	ʒ	ʂ	ʐ	ç	ʝ	x	ɣ	χ	ʁ	ħ ʕ	h ɦ
						ɬ	ɮ												
			ʋ			ɹ			ɻ		j		ɰ						
						l			ɭ		ʎ		ʟ						

Figure 1: The IPA consonants in Stone Sans Phonetic

i	y	ɨ	ʉ	ɯ	u
ɪ	ʏ				ʊ
e	ø	ɘ	ɵ	ɤ	o
		ə			
ɛ	œ	ɜ	ɞ	ʌ	ɔ
æ		ɐ			
a	ɶ			ɑ	ɒ

Figure 2: The IPA vowels in Stone Sans Phonetic and Stone Sans Phonetic Alternates

þ	ƚ	ƙ	ɋ	ˀ
š	č	ž		
λ	ƛ			

Figure 3: Non-IPA characters from Stone Sans Phonetic and Stone Sans Phonetic Alternates

the names `StoneSans`, `StoneSans-PhoneticIPA`, and `StoneSans-PhoneticAlternate`. If yours are installed under different names, specify those names using the `sansfontname`, `phoneticfontname`, and `alternatefontname` options.

```
\usepackage[phoneticfontname=StoneSansIPA,
            alternatefontname=StoneSansAlt]{stoneipa}
```

If some characters appear too small, use the `noalternatescaling` option. As of this writing, the version of Stone Sans Phonetic Alternates that is for sale on Adobe's website has characters about 10% too large, and the StoneIPA package attempts to compensate for this. The `noalternatescaling` option turns off this compensation.

```
\usepackage[noalternatescaling]{stoneipa}
```

4   Implementation

4.1   Option handling

```
1 \NeedsTeXFormat{LaTeX2e}[1994/06/01]
2
3 \RequirePackage{fontspec}
4 \RequirePackage{newunicodechar}
5 \RequirePackage{pdftexcmds}
6 \RequirePackage{kvoptions}
7 \SetupKeyvalOptions{family=sipa, prefix=sipa@}
8 \DeclareStringOption[StoneSans]{fontname}
9 \DeclareStringOption[StoneSansSCITCTTMedium]{scfontname}
10 \DeclareStringOption[StoneSans-PhoneticIPA]{phoneticfontname}
11 \DeclareStringOption[StoneSans-PhoneticAlternate]{alternatefontname}
12 \DeclareBoolOption{noalternatescaling}
```

```
13 \ProcessKeyvalOptions*
```

4.2 Font declarations

```
14 \setsansfont{\sipa@fontname}[Scale=MatchLowercase,
15   SmallCapsFont=\sipa@scfontname]
16
17 \newfontfamily{\sipafont}{\sipa@phoneticfontname}[Scale=MatchLowercase]
18
19 \ifsipa@noalternatescaling
20     \newfontfamily{\sipaalternatefont}{\sipa@alternatefontname}[Scale=1.0]
21 \else
22     \newfontfamily{\sipaalternatefont}{\sipa@alternatefontname}[Scale=0.9]
23 \fi
```

4.3 Character macros

`\sipachoosephoneticchar`
`\sipachoosealternatechar`

The Stone Sans Phonetic font is weirdly encoded. For instance, a symbol that looks like ʷ is stored at the code point normally used for +. This means that sometimes, the Unicode in our `.tex` file will need to be translated. For instance, if we encounter a ʷ character when the current font family is Roman, we can print it as usual; but if we encounter the same character when the font family is sans serif, we should translate it to a + and print it in Stone Sans Phonetic. The `\sipachoosephoneticchar` and `\sipachoosealternatechar` macros do this conditional translation: given two characters, when the current family is sans serif, they print the first in Stone Sans Phonetic; and when the current family is anything else, they print the second.

```
24 \def\sipachoosephoneticchar#1#2{%
25     \ifnum\pdf@strcmp{\f@family}{\sfdefault}=\z@
26         {\sipafont #1}%
27     \else
28         #2%
29     \fi
30 }
31
32 \def\sipachoosealternatechar#1#2{%
33     \ifnum\pdf@strcmp{\f@family}{\sfdefault}=\z@
34         {\sipaalternatefont #1}%
35     \else
36         #2%
37     \fi
38 }
```

4.4 Character setup

`\sipasetup`
`\sipaalternatesetup`

Now we define two convenience functions that we will use to set up Unicode characters. The macro `\sipasetup#1#2` declares that the Stone Sans Phonetic glyph stored at #1 should be used when the TeX source contains the Unicode character #2. The macro `\sipaalternatesetup` does the same, but for Stone Sans Phonetic Alternates.

```
39
```

3

```
40 \def\sipasetup#1#2{\newunicodechar{#2}{{\sipachoosephoneticchar{#1}{#2}}}}
41 \def\sipaalternatesetup#1#2{\newunicodechar{#2}{{\sipachoosealternatechar{#1}{#2}}}}
42
43 \sipasetup{a\$}{ā}
44 \sipasetup{e\$}{ē}
45 \sipasetup{i\$}{ī}
46 \sipasetup{o\$}{ō}
47 \sipasetup{u\$}{ū}
48 \sipasetup{y\$}{ȳ}
49 \sipasetup{+}{ʷ}
50 \sipasetup{:}{ː}
51 \sipasetup{?}{ʔ}
52 \sipasetup{@}{ə}
53 \sipasetup{A}{ɑ}
54 \sipasetup{B}{ʙ}
55 \sipasetup{C}{ç}
56 \sipasetup{D}{ð}
57 \sipasetup{E}{ɛ}
58 \sipasetup{F}{ɸ}
59 \sipasetup{G}{ɢ}
60 \sipasetup{H}{ʜ}
61 \sipasetup{I}{ɪ}
62 \sipasetup{J}{ʝ}
63 %\sipasetup{K}{ɨ}
64 \sipasetup{L}{ʟ}
65 \sipasetup{M}{ɰ}
66 \sipasetup{N}{ɴ}
67 \sipasetup{O}{ɔ}
68 \sipasetup{Q}{ɾ}
69 \sipasetup{R}{ʀ}
70 \sipasetup{S}{ʃ}
71 \sipasetup{T}{θ}
72 \sipasetup{U}{ʊ}
73 \sipasetup{V}{ʋ}
74 \sipasetup{W}{ɯ}
75 \sipasetup{X}{χ}
76 \sipasetup{Y}{ʏ}
77 \sipasetup{Z}{ʒ}
78 \sipasetup{\ }{ʘ}
79 \sipasetup{\{}{æ}
80 \sipasetup{®}{ɲ}
81 \sipasetup{¿}{ʕ}
82 \sipasetup{Á}{ɒ}
83 \sipasetup{Â}{β}
84 \sipasetup{Ã}{ɕ}
85 \sipasetup{Ä}{ɖ}
86 \sipasetup{Æ}{ɜ}
87 \sipasetup{Ç}{ɢ}
88 \sipasetup{È}{ɦ}
89 \sipasetup{É}{ħ}
```

```
 90 \sipasetup{Ë}{ɫ}
 91 \sipasetup{Ì}{ƀ}
 92 \sipasetup{Í}{ɱ}
 93 \sipasetup{Î}{ŋ}
 94 \sipasetup{Ï}{œ}
 95 \sipasetup{Ð}{ɻ}
 96 \sipasetup{Ñ}{ɾ}
 97 \sipasetup{Ò}{ʁ}
 98 \sipasetup{Ô}{ʈ}
 99 \sipasetup{Õ}{ɵ}
100 \sipasetup{×}{ʃ}
101 \sipasetup{Ø}{ɧ}
102 \sipasetup{Ú}{ʐ}
103 \sipasetup{Þ}{ʕ}
104 \sipasetup{à}{ɬ}
105 \sipasetup{á}{ɐ}
106 \sipasetup{â}{ɓ}
107 \sipasetup{ã}{ɕ}
108 \sipasetup{ä}{ɗ}
109 \sipasetup{å}{ɣ}
110 \sipasetup{\ae}{ɤ}
111 \sipasetup{Ç}{ɠ}
112 \sipasetup{è}{ɥ}
113 \sipasetup{é}{ɨ}
114 \sipasetup{ê}{ʝ}
115 \sipasetup{ë}{ƙ}
116 \sipasetup{ì}{ɭ}
117 \sipasetup{í}{ɯ}
118 \sipasetup{î}{ɳ}
119 \sipasetup{ï}{ø}
120 \sipasetup{\dh}{þ}
121 \sipasetup{ñ}{ɖ}
122 \sipasetup{ò}{ɺ}
123 \sipasetup{ó}{ʂ}
124 \sipasetup{ô}{ƭ}
125 \sipasetup{õ}{ʉ}
126 \sipasetup{ö}{ʌ}
127 \sipasetup{÷}{ʍ}
128 \sipasetup{ù}{ʎ}
129 \sipasetup{ú}{ʐ}
130 \sipasetup{û}{œ}
131 \sipaalternatesetup{?}{ʼ}
132 \sipaalternatesetup{e}{ə}
133 \sipaalternatesetup{å}{ɞ}
134 \sipaalternatesetup{c}{č}
135 \sipaalternatesetup{s}{š}
136 \sipaalternatesetup{z}{ž}
137 \sipaalternatesetup{l}{λ}
138 \sipaalternatesetup{ì}{ƛ}
```