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Computer Coding of the IPA: Supplementary Report

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Following the 1989 IPA Convention, the workgroup on Computer Coding of IPA Symbols and Computer Representation of Individual Languages recommends that a unique numerical equivalent and descriptive name be assigned for reference purposes to every symbol or diacritic used in current or earlier versions of the IPA. The logical phonetic organization of the IPA Symbol Chart is the basis for assigning the IPA Number, the first digit of which indicates the category of the symbol. The 1nn series includes consonant symbols from the principal place-by-manner grid of the Chart and from the Other Symbols section. The 2nn list includes former or alternative IPA consonant symbols (beginning with 201), and non-IPA consonant symbols that have been widely used in computer-coded systems (starting with 299 and working backwards). The 3nn series specifies vowels, most of which appear in the vowel quadrilateral (beginning with 301), and with former symbols numbered from 399 backwards. The 4nn series includes segmental diacritics (beginning with 401), with formerly used diacritics that no longer appear on the Chart numbered from 499 backwards. The 5nn series includes suprasegmental symbols, from that section of the Chart (beginning with 501), with previously specified tone marks numbered from 599 backwards. The 6nn series is reserved for symbols representing voice quality settings or pathological speech to be assigned at a future date; 7nn-8nn are also reserved for future specification. The 9nn series specifies control characters and escape sequences, designed to relate characters to each other in a string (e.g. for correct placement of diacritics). The intention of the IPA Number Chart is to parallel the IPA Symbol Chart, making the locations and relationships of items explicit and unambiguous. For the present purposes of reviewing and evaluating the numbering scheme, the presentation of the IPA Number Chart and corresponding lists is intended to illustrate the relationships between symbols on the Chart (and with those not shown but also numbered), and where overlap between categories may occur.

Symbols can now be listed with reference to their IPA Number, and cross-referenced to symbol Name. These reference lists can follow (1) chart order of appearance of the symbols, (2) quasi-alphabetical order of the symbol shapes themselves, and (3) alphabetical order of the Names of the symbols. The IPA Number Chart provides a visual map in chart order. The list of Consonant/Vowel Symbols in Chart/Number Order summarizes this sequence and includes the listing of the 2nn series and items of the 3nn series that are no longer on the Chart. The list of Consonant/Vowel Symbols in Alphabetical Order by Symbol reproduces the compilation in Pullum and Ladusaw's (1986) *Phonetic Symbol Guide*. Some modifications have been made to the Names taken from the *Guide*. The Computer Workgroup suggests that in order to have an explicit system for referring to each character unambiguously, symbols need to be called something which is relatively nonphonetic in addition to having a number. Diacritics are listed, with illustrations as to use, according to chart order. In addition, it is also possible to produce cross-referenced lists to Consonant/Vowel symbols and to Diacritics according to alphabetical order by symbol Name. All of these listings are proposed to constitute a part of *The IPA Handbook*, but only some of them appear here now: the listing of the

consonant/vowel symbols is in quasi-alphabetical order, by symbol; the listing of the Diacritics is in alphabetical order, by name of the diacritic.

¹ Submitted on behalf of the Computer Workgroup.

Reference

Pullum, G. K. and W. A. Ladusaw (1986). *Phonetic Symbol Guide*. Chicago: University of Chicago Press.

Consonant/Vowel Symbols (Alphabetical Order by Symbol)			Lower-case F	f	128
Lower-case A	a	304	Lower-case G	g	110
Turned A	ɐ	324	Hooktop G	ɡ̤	166
Cursive A	ɑ	305	Cursive G	g	210
Turned Cursive A	ɒ	313	Small Capital G	ɡ	112
Ash Digraph	æ	325	Hooktop Small Capital G	ɡ̤	168
Turned V	ʌ	314	Gamma	γ	141
			Ram's Horns	ʀ	315
Lower-case B	b	102	Lower-case H	h	146
Hooktop B	ḅ	160	Crossed H	ħ	144
Small Capital B	B	121	Hooktop H	ɦ	147
Beta	β	127	Hooktop Heng	ɦ̥	175
Lower-case C	c	107	Turned H	ɥ	171
Hooktop C	ḥ	163	Small Capital H	ɦ	173
C Wedge	č	299	Lower-case I	i	301
C Cedilla	ç	138	Undotted I	ı	394
Curly-tail C	ç̣	182	Barred I	ĩ	317
Stretched C	Ĉ	202	Iota	ι	399
Lower-case D	d	104	Small Capital I	ı	319
Hooktop D	ḏ	162	Lower-case J	j	153
Right-tail D	ḑ	106	Curly-tail J	ȝ	139
D-Z Digraph	dz	212	J Wedge	ȷ	298
D-Yogh Digraph	ḍ	214	Barred Dotless J	ȝ̇	108
D-Curly-tail-Z Digraph	ḏ̣	216	Hooktop Barred Dotless J	ȝ̤	164
Eth	ð	131	Lower-case K	k	109
Lower-case E	e	302	Hooktop K	ḱ	165
Schwa	ə	322	Turned K	ḳ	291
Right-hook Schwa	ə̤	327	Lower-case L	l	155
Reversed E	ɛ̥	397	L with Tilde	ł	209
Epsilon	ε	303	Belted L	ł̤	148
Closed Epsilon	ο	396	Right-tail L	ł̣	156
Reversed Epsilon	ε̥	326	Small Capital L	Ł	158
Closed Reversed Epsilon	α	395	L-Yogh Digraph	ȥ	149

Lambda	λ	295			
Crossed Lambda	λ̸	294			
Lower-case M	m	114	Lower-case T	t	103
Left-tail M (at right)	ṁ	115	Hooktop T	ṫ	161
Turned M	ṡ	316	Left-hook T	ṭ	208
Turned M, Right Leg	ṣ	154	Right-tail T	ṭ̇	105
			T-S Digraph	ts	211
			T-Esh Digraph	ṫṣ	213
			T-Curly-tail-C Digraph	ṭṣ	215
Lower-case N	n	116	Turned T	ı	201
N, Right Leg	ṅ	293	Theta	θ	130
Left-tail N (at left)	ṇ	118			
Eng	ṇ	119	Lower-case U	u	308
Right-tail N	ṇ̇	117	Barred U	ṁ	318
Small Capital N	N	120	Upsilon	υ	321
Lower-case O	o	307	Lower-case V	v	129
Bull's Eye	⊙	176	Cursive V	ṽ	150
Barred O	ø	323			
Slashed O	ø	310	Lower-case W	w	170
O-E Digraph	œ	311	Turned W	ʍ	169
Small Capital O-E Digraph	œ	312			
Open O	∘	306	Lower-case X	x	140
Closed Omega	ω	398	Superscript X	ˣ	292
			Chi	χ	142
Lower-case P	p	101	Lower-case Y	y	309
Hooktop P	ṑ	159	Turned Y	ʏ	157
Phi	φ	126	Small Capital Y	ʎ	320
Lower-case Q	q	111	Lower-case Z	z	133
Hooktop Q	ṑ	167	Z Wedge	ž	296
			Curly-tail Z	ʒ	183
Lower-case R	r	122	Right-tail Z	ʒ̇	137
Fish-hook R	ṛ	124	Yogh	ʒ	135
Long-leg R	ṛ	206	Curly-tail Yogh	ʒ̇	205
Turned Long-leg R	ṛ̇	181	Crossed Two	ʒ̇	290
Right-tail R	ṛ̇	125			
Turned R	ṛ̇	151	Glottal Stop	ʔ	113
Turned R, Right Tail	ṛ̇̇	152	Barred Glottal Stop	ʔ̇	172
Small Capital R	R	123	Inverted Glottal Stop	ʔ̇	203
Inverted Small Capital R	Ṛ	143	Reversed Glottal Stop	ʔ̇	145
			Barred Reversed Glottal Stop	ʔ̇̇	174
Lower-case S	s	132	Pipe		177
Superscript S	ˢ	207	Double-barred Pipe	≡	179
S Wedge	š	297	Double Pipe		180
Right-tail S (at left)	ṣ	136	Exclamation Point	!	178
Esh	ʃ	134			
Curly-tail Esh	ʃ̇	204			

Diacritics (Alphabetical Order by Name)

Acute Accent (over)	´	513	á
Acute Accent (under)	¸	599	ą
Advancing Sign	ˆ	417	ų
Apostrophe	’	401	p’ k’ ts’ tf’
Bottom Tie Bar	⸱	509	
Breve	˘	505	ě
Circumflex	ˆ	597	â
Comma	,	491	
Corner	⌋	427	p⌋ d⌋
Double Acute Accent (over)	¨	512	ǎ
Double Grave Accent (over)	˘˘	516	ǎ
Double Vertical Line		508	
Down Arrow	↓	517	
Downward Diagonal Arrow	↘	511	
Extra-high Tone Bar	⸫	519	
Extra-low Tone Bar	⸬	523	
Grave Accent (over)	`	515	à
Grave Accent (under)	¸	598	ą
Half-length Mark	˙	504	e˙
High Tone Bar	⸪	520	
Inverted Subscript Bridge	˘	409	ḡ ḑ
Length Mark	ː	503	eː
Low Tone Bar	⸩	522	
Lowering Sign	˙	430	ę ǣ (er or)
Macron	ˉ	514	ā
Mid Tone Bar	⸭	521	
Minus Sign	-	494	i-
Over-cross	×	416	ě
Over-dot	˙	493	ä
Palatalization Hook	ˆ	498	ĵ
Period	.	506	ii.ækt
Plus Sign	+	495	u+
Raising Sign	ˆ	429	ę ĭ (eı oı)
Retracting Sign	˘	418	ų
Reversed Apostrophe	‘	492	
Right Hook	˘	419	e˘ œ˘ o˘ (earlier usage: ę ą ă ȳ)
Subscript Arch	˘	432	ę
Subscript Bridge	˘	408	ḡ ḑ
Subscript Left Half-ring	˘	412	ȳ
Subscript Plus	˙	413	ų
Subscript Right Half-ring	˘	411	ȳ
Subscript Seagull	˘	407	ḡ ḑ

Subscript Square	ₐ	410	ṇ	ḍ
Subscript Tilde	₃	406	ḃ	ḁ
Subscript Umlaut	ₐ̈	405	ḃ̈	ḁ̈
Subscript W	ₓ	499	ṭ	ḍ
Subscript Wedge	ₓ	403	ṣ	ḵ
Superimposed Tilde	ₓ	428	ṇ	ḍ
Superscript Gamma	ʸ	422	ṭʸ	ḍʸ
Superscript H	ʰ	404	pʰ	tʰ
Superscript J	ʲ	421	tʲ	ḍʲ
Superscript L	ˡ	426	dˡ	
Superscript N	ˢ	425	dˢ	
Superscript Rev. Glottal Stop	ˠ	423	tˠ	ḍˠ
Superscript Tilde	ṽ	424	ē	ā
Superscript W	ˠ	420	tˠ	ḍˠ
Superscript Y	ʸ	496	lʸ	
Syllabicity Mark	ṽ	431	ṭ	ṇ ḍ
Top Tie Bar	⸏	433	ḵṽ	ḁṽ ṭṽ ḍṽ
Umlaut	̈	415	ē	
Under-bar	̄	414	e	
Under-dot	̣	497	e	
Under-ring (Over-ring)	̤ (°)	402	ṇ	ḍ (ṇ ḍ)
Up Arrow	↑	518		
Upward Diagonal Arrow	↗	510		
Vertical Line		507		
Vertical Stroke (Inferior)	ṽ	502	ḵṽ	ḁṽ
Vertical Stroke (Superior)	ṽ	501	ḵṽ	ḁṽ
Wedge	ₓ	596	ḍ	

Symbols for Voice Quality or Pathological Speech (6nn)

Reserved for Future Specification (7nn-8nn)

Control Characters/Escape Sequences (9nn)

Left Square Bracket	[901
Right Square Bracket]	902
Slash	/	903
Space		904
Backspace Overstrike		905