Proposal to Include IEC Power Button Symbols

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Abstract

The international symbol IEC 60417-5009 ⏻ meaning 'power' is not today in Unicode. Clearly it would be useful to anyone writing technical or user manuals. Furthermore, for electronically published documentation, it is crucial for this and a few other symbols to be defined because it makes them searchable in plain text. In this proposal we provide a TrueType font named 'IECpower' containing the glyphs as specified in three international standards together with all of the needed character properties for Unicode specification.

1 Introduction

The ⏻, ⏼, ⭘, and ⏽ symbols are defined in IEC 60417 [2], which is also ISO 7000:2012 [3]. IEEE 1621 further defines ☾ and refines the definition of ⏻, notably because IEEE 1621 standardises current practice as universally used on devices with regard to the ⏻ symbol and to a lesser extent for the ☾ symbol as well [1].

These characters, particularly ⏻, are needed for technical writing and are not in Unicode. The advantage of having them there would be search-ability in plain text, something not possible with graphical symbols, as technical writers are limited to using today.

We provide with our proposal a TrueType font, hereby released for unlimited use.

1.1 The *IEC Power* TrueType Font

The five symbols included in the *IEC Power* TrueType font are shown in Table 1. Only these symbols exist in the font; if an undefined character, for example 'A' is called for, the result is implementation-defined.[1]

Placement of the symbols in the *IEC Power* TrueType font was chosen thoughtfully so as to be mnemonic: 'P' for power, 'S' for stand-by or sleep, 'T' for toggling power on or off, and '1' and '0' for power-on and power-off,

[1] In XeTeX, for example, the result of 'A' in *IEC Power* is ■. In OpenOffice Writer, the result is the letter 'A' but in a san-serif typeface.

Symbol	Applicable Standard(s)	Character To Type	Mnemonic	Meaning
⏻	IEC 60417-5009	P	‘power’	Power
⏼	IEC 60417-5010	T	‘toggle’	Power on/off
⭘	IEC 60417-5008	0	‘binary zero’	Power off
⏽	IEC 60417-5007	1	‘binary one’	Power on
☾	IEEE 1621	S	‘sleep’	Stand-by

Table 1: All of the available glyphs in the *IEC power* TrueType font.

respectively, all of these mnemonics ‘fail gracefully’ should the *IEC Power* font happen to be unavailable.

1.2 Example Usage

In-line in text with normal spacing, the ⏻ characters ☾ look ⏼ like ⏽ this ⭘.

2 Character Properties

Suggested character properties for the proposed symbols are given in Table 2.

Property	Value
A	B

Table 2: Suggested character properties.

3 Anticipated Objections

It might be argued that the meaning of ⏻ is disputed between IEC 60417 and IEEE 1621, *i.e.*, that IEC 60417 (as well as ISO 7000:2012) defined ⏻ to mean ‘stand-by’ and IEEE 1621 changed it to mean ‘power’. We counter that the issue is irrelevant to the Unicode Consortium for two reasons: firstly, because the symbol itself is needed by writers, who could use it (if it were available to them) according to local conventions regardless of the disagreement between IEC/ISO and IEEE; and secondly, because IEEE 1621 specifically codifies *existing practice*; the number of devices out there using ⏻ to mean ‘power’ dwarfs the number of devices that use it to mean ‘stand-by’ [1].

There are, of course, many characters in Unicode already resembling circles (⭘), or lines (⏽), or the crescent moon (☾). None of the existing characters, however, has anything semantically to do with the concepts of ‘power’, ‘switch’, ‘toggle’, or ‘interrupter’. There are eleven occurrences of the word ‘power’ in

Version 6.3.0 of the Unicode standard (Table 3) but none has anything to do with device control [4].

The proposed characters are not part of any script and the precise form of their drawing is not critical.

Section	Code Point	Description
Telugu fractions and weights	0C78	TELUGU FRACTION DIGIT ZERO FOR ODD POWERS OF FOUR
	0C79	TELUGU FRACTION DIGIT ONE FOR ODD POWERS OF FOUR
	0C7A	TELUGU FRACTION DIGIT TWO FOR ODD POWERS OF FOUR
	0C7B	TELUGU FRACTION DIGIT THREE FOR ODD POWERS OF FOUR
	0C7C	TELUGU FRACTION DIGIT ONE FOR EVEN POWERS OF FOUR
	0C7D	TELUGU FRACTION DIGIT TWO FOR EVEN POWERS OF FOUR
	0C7E	TELUGU FRACTION DIGIT THREE FOR EVEN POWERS OF FOUR
Miscellaneous Symbols	26EE	GEAR WITH HANDLES (= power plant, power substation)
Kangxi Radicals	2F12	KANGXI RADICAL POWER
Yijing Hexagram Symbols	4DE1	HEXAGRAM FOR GREAT POWER
Mathematical Alphanumeric Symbols	1D4AB	MATHEMATICAL SCRIPT CAPITAL P (= power set)

Table 3: All occurrences of 'power' in the Unicode Standard, Version 6.3.0.

3.1 Sever-ability

Of all the characters in Table 1, the most needed is ⏻. We included the others in this proposal because they form a logical group. If, however, there is any objection to inclusion of ⏽, ⭘, ⏼, or ⏾, the one we really need is ⏻.

4 Summary and Conclusion

The ⏻ and ⏾ symbols are most important because nothing like them appears already in Unicode.

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References

[1] IEEE Standards Association. *IEEE Standard for User Interface Elements in Power Control of Electronic Devices Employed in Office/Consumer Environments*, 2004. IEEE-STD-1621-2004.

[2] International Electrotechnical Commision. *IEC 60417: Graphical symbols for use on equipment*, 2005.

[3] International Organisation for Standardisation. *ISO 7000:2012, Graphical symbols for use on equipment—Registered symbols*, 2012.

[4] The Unicode Consortium. The Unicode standard, version 6.3.0, 2013.