Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation Internationale de Normalisation
Международная организация по стандартизации

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Title: Proposal to incorporate two telephony symbols into Unicode by glyph and annotation changes
Author: Karl Pentzlin
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1. Introduction

The well-known characters at the low corners of telephone keypads are commonly used as text characters in instruction manuals and other text regarding their use.

Fig. 1: Detail from a telephone keyboard, c. 1982
(from Wikipedia, http://commons.wikimedia.org/wiki/File:FeTAp_751.JPG)

In many cases, the universally available characters U+002A ASTERISK and U+0023 NUMBER SIGN are used to represent these symbols. However, this is an inferior solution, as the star symbol has to have the same width as the number-sign-like symbol, while the asterisk commonly is smaller and placed higher.

The exact shape of these symbols is given in the international telephony standard issued by the International Telecommunication Union, ITU-T E.161 (publicly available at http://www.itu.int/rec/T-REC-E.161-200102-I/en , current edition: 02/2001), where these symbols are named *"star"* and *"square".*
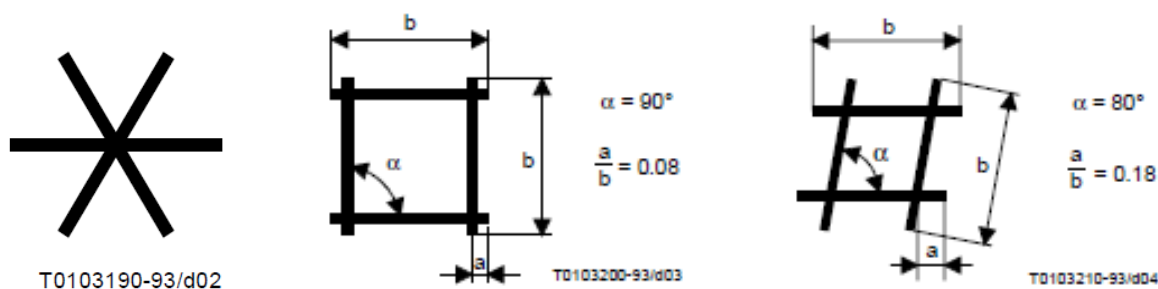

Fig. 2 of E.161   *Fig. 3 of E.161*   *Fig. 4 of E.161*

While regarding the *"star"*, it is only required that it *"should have a shape easily identified as the general shape shown in Figure 2"*, the *"square"* is described in more detail, and an inclined form is allowed as alternative:
"This symbol shall consist of four lines of equal length (b) forming two pairs of parallel lines. One pair is horizontal while the other is vertical or inclined to the right at an angle a of 80° as shown in Figure 4. It will be seen that two pairs of parallel lines overlap. The ratio a/b where a is the overlap, shall be between 0.08 and 0.18. The preferred values are either:
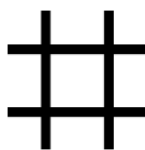*– a = 90° with a/b = 0.08;*
– a = 80° with a/b close to the upper limit of 0.18."

While no Unicode characters (as of Unicode V6.2) are explicitly designated to represent these symbols, there are existing characters which are suited for this purpose:

 U+26B9 SEXTILE   U+2317 VIEWDATA SQUARE

(glyphs for both characters as shown in the Unicode 6.2 code tables).

- The sextile, encoded as an astrological symbol, is constructed of three rectangular beams crossed at their central point, one of them being horizontal, the other two inclined by a n angle of 60°. Thus, it resembles exactly the E.161 symbol, only allowing for variation in line thickness as usual glyph variation.

  Its identity with the telephony symbol is e.g. already recognized in ite Japanese Wikipedia (2013-05-02, http://ja.wikipedia.org/wiki/%E3%82%B9%E3%82%BF%E3%83%BC%E3%83%9E%E3%83%BC%E3%82%AF .)

- The viewdata square, as its name implies, is introduced anyway as a character for "Viewdata" which is an application related to telephony introduced in the 1980s. It can be presumed that it had to be in fact the same symbol as the E.161 symbol.

 However, the proportions of its representative glyphs are not in the limits given in E.161.

  The following figure shows glyphs according to E.161with minimum, intermediate and maximum overshoot, as well as an inclined example with maximum overshoot (which is the most similar form to usual glyphs of U+0023 NUMBER SIGN).

The glyphs can be found in the font downloadable at http://pentzlin.com/ViewdataSquareGlyphs.ttf , released into the Public Domain by the author.

2. Requested glyph change

It is requested to change the representative glyph of U+2317 VIEWDATA SQUARE to the glyph with intermediate overshoot *(a/b = 0.13)* as shown above. (This is preferred to the minimal value which is preferred in ITU-T E.161, as this is by far harder to identify with the designs prevailing on modern telephone keyboards.) The proposed glyph is as follows:
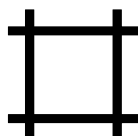
3. Requested annotation changes

U+2317 VIEWDATA SQUARE
    Add: = square (on telephone keypads)
    Add: · representative glyph in accordance with ITU-T E.161

U+26B9 SEXTILE
    Add: = star (on telephone keypads)
    Add: · representative glyph in accordance with ITU-T E.161

By the way, an annotation for another character is requested to be changed, which was valid only before the encoding of U+26B9 SEXTILE:

U+2736 SIX POINTED BLACK STAR
    Change: = sextile
    To: → 26B9 sextile