

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

Doc Type: Working Group Document

Title: Proposal to encode ISO/IEC 9995 symbols used on German keyboards

Source: Karl Pentzlin (DIN)

Status: Individual Contribution

Action: For consideration by JTC1/SC2/WG2 and UTC

Date: 2017-01-24

Based on (but not replacing): L2/12-302 = ISO/IEC JTC1/SC2/WG2 N4317

1. Introduction

The symbols devised in ISO/IEC 9995-7:2009, its recent Amendment 1 (2012) and in ISO/IEC 9995-10:2013 are to be used not only as engraving on physical keyboards, but also are intended for use in plain text, especially in instructions how to use a keyboard, or in explanations how to enter specific texts.

Therefore, software must have access to all these symbols. Thus, it is advisable to have all these symbols encoded in Unicode. This was already done for the 1994 version of ISO/IEC 9995-7.

Thus, an according proposal was presented in 2012 (L2/12-302 = ISO/IEC JTC1/SC2/WG2 N4317), as a liaison contribution by ISO/IEC JTC1/SC35.

However, this was not accepted, as it was required to show actual use of such symbols before.

In the meantime, some of these symbols are in use especially on current designs of German keyboards, in consequence of the acceptance of the German keyboard standard DIN 2137 which was reworked in 2012.

To enable descriptions of this keyboard and its key engravings using Unicode, these symbols (in fact a small selection of the still unencoded symbols standardized in ISO/IEC 9995-7 and 9995-10) are proposed here separately.

Fig. 1: Detail of a German standard keyboard according to DIN 2137-1:2012-06, showing some of the ISO/IEC 9995-7 and 9995-10 symbols proposed here as Unicode characters.

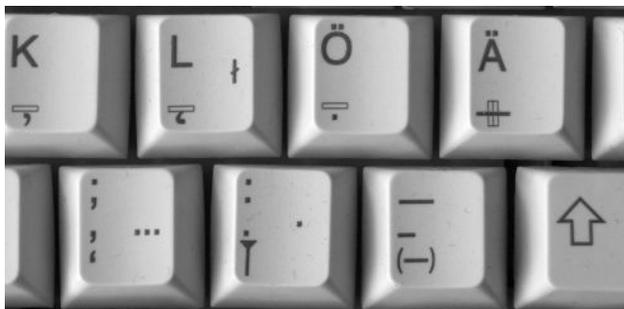


Fig. 2: Excerpts from p.9 and p.10 of the printed edition of the German standard DIN 2137-1:2012-06, showing the use of the proposed characters in print.

C08	k U+006B Ⓐ	K U+004B	⌘ U+0326	Ⓚ U+0138	⌘ U+0326	⦿ U+0335
C09	l U+006C Ⓐ	L U+004C	⌘ U+0328	Ⓛ U+0142	Ⓛ U+0141 Ⓑ	⦿ U+0338
C10	ö U+00F6 Ⓐ	Ö U+00D6	⌘ U+0323	⓪ U+0301	⌘ U+030B	° U+00B0

B08	, U+002C	; U+003B	⌘ U+02BB	... U+2026	× U+00D7	\$ U+0024
B09	. U+002E	: U+003A	⌘ U+200C	! U+00B7	÷ U+00F7	# U+0023
B10	- U+002D	_ U+005F	⌘ U+00AD	! U+0140	Ⓛ U+013F Ⓑ	⌘ U+2011
A03	⌘ U+0020	⌘ U+0020	⌘ U+00A0	⌘ U+202F	⌘ U+200C	⌘ U+00A0

1.1 Introduction of the symbols from ISO/IEC 9995-10:2013

There are two parts of the ISO/IEC 9995 international standard series which devise keyboard symbols. While ISO/IEC 9995-7 devises symbols for keyboard functions, ISO/IEC 9995-10 devises symbols for characters which cannot be identified by their shape only.

Besides other symbols, ISO/IEC 9995-10 provides placeholders for base characters. By these, diacritical marks can be shown in the relative position to their base character. These placeholders also indicate in which way the diacritical mark has to be entered:

- A dotted circle (known from the Unicode code tables) indicates that the diacritical mark has to be entered after the base character.
- A flat (narrow) rectangle indicates that the diacritical mark has to be entered first before entering the base character.

This method, inherited from the mechanical typewriters and older encoding standards line ISO/IEC 6937, is called the "dead key" method and is part of the keyboard standards of several European countries (e.g. Germany). This method is standardized in ISO/IEC 9995-11:2015 "Functionality of dead keys and repertoires of characters entered by dead keys".

2. Proposed Characters

The representative glyphs are derived from the original depictions contained in the ISO/IEC 9995-7 and 9995-10 documents.

Regarding the hyphen symbols, the parentheses and brackets contained in them are very small and therefore not identical to parentheses and brackets standing on their own. Therefore, no compatibility decomposition is given for these symbols.

Confusability:

None of the proposed symbols is confusable with already encoded characters. However, none of them is intended to be usable in URLs and similar applications.

Block: Control Pictures

Keyboard symbols from ISO/IEC 9995-7

Also intended for the display of the symbolized characters in "controls visible mode", and for use in instruction texts.

	U+2427	SYMBOL FOR THIN OR NARROW SPACE = ISO/IEC 9995-7 symbol 70, IEC 60417 symbol 6072-8 → 2009 thin space
	U+2428	SYMBOL FOR NARROW NO-BREAK SPACE = ISO/IEC 9995-7 symbol 74, IEC 60417 symbol 6072-11 → 237D shouldered open box → 202F narrow no-break space
	U+2429	SYMBOL FOR SOFT HYPHEN = ISO/IEC 9995-7 symbol 76, IEC 60417 symbol 6073 • hyphen surrounded by very small parentheses → 00AD soft hyphen
	U+242A	SYMBOL FOR NON-BREAKING HYPHEN = ISO/IEC 9995-7 symbol 77, IEC 60417 symbol 6074 • hyphen surrounded by very small inverted brackets → 2011 non-breaking hyphen
	U+242B	SYMBOL FOR ZERO WIDTH NON-JOINER = ISO/IEC 9995-7 symbol 81, IEC 60417 symbol 6077-1 = nail → 200C zero width non-joiner
	U+242C	SYMBOL FOR ZERO WIDTH JOINER = ISO/IEC 9995-7 symbol 82, IEC 60417 symbol 6077-2 → 200D zero width joiner

Block: Miscellaneous Symbols and Arrows

Keyboard symbols from ISO/IEC 9995-10

	U+2B74	WHITE HORIZONTAL NARROW RECTANGLE = ISO/IEC 9995-10 symbol 44, IEC 60417 symbol 6140 = dead key base mark • has the width of an em dash
	U+2B75	WHITE VERTICAL NARROW RECTANGLE = ISO/IEC 9995-10 symbol 45, IEC 60417 symbol 6141 = cap height marker • identifies modifier letters on keytops • has the height of a capital Latin letter

Keyboard symbols from ISO/IEC 9995-7

	U+2B96	HORIZONTAL STROKE APPLICATOR SYMBOL = ISO/IEC 9995-7 symbol 87, IEC 60417 symbol 6079-1
	U+2B97	DIAGONAL SLASH APPLICATOR SYMBOL = ISO/IEC 9995-7 symbol 88, IEC 60417 symbol 6079-2

Keyboard symbol from ISO/IEC 9995-7

	U+2BC9	MENU INVOCATION = ISO/IEC 9995-7 symbol 89, IEC 60417 symbol 6089
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Block: Enclosed Alphanumeric Supplement

Keyboard symbol from ISO/IEC 9995-7

	U+1F1AD	SQUARED FN = ISO/IEC 9995-7 symbol 97, IEC 60417 symbol 6081 = function key
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3. Properties:

All proposed characters have common symbol properties.

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U+2427;SYMBOL FOR THIN OR NARROW SPACE;So;0;ON;;;;N;;;;;
U+2428;SYMBOL FOR NARROW NO-BREAK SPACE;So;0;ON;;;;N;;;;;
U+2429;SYMBOL FOR SOFT HYPHEN;So;0;ON;;;;N;;;;;
U+242A;SYMBOL FOR NON-BREAKING HYPHEN;So;0;ON;;;;N;;;;;
U+242B;SYMBOL FOR ZERO WIDTH NON-JOINER;So;0;ON;;;;N;;;;;
U+242C;SYMBOL FOR ZERO WITDH JOINER;So;0;ON;;;;N;;;;;
U+2B74;WHITE HORIZONTAL NARROW RECTANGLE;So;0;ON;;;;N;;;;;
U+2B75;WHITE VERTICAL NARROW RECTANGLE;So;0;ON;;;;N;;;;;
U+2B96;HORIZONTAL STROKE APPLICATOR SYMBOL;So;0;ON;;;;N;;;;;
U+2B97;DIAGONAL SLASH APPLICATOR SYMBOL;So;0;ON;;;;N;;;;;
U+2BC9;MENU INVOCATION;So;0;ON;;;;N;;;;;
U+1F1AD;SQUARED FN;So;0;ON;;;;N;;;;;
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**PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹**

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	<i>Proposal to encode ISO/IEC 9995 symbols used on German keyboards</i>
2. Requester's name:	<i>Karl Pentzlin</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual Contribution</i>
4. Submission date:	<i>2017-01-24</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<input checked="" type="checkbox"/> Yes
(or) More information will be provided later:	<input type="checkbox"/>

B. Technical – General

1. Choose one of the following:		
a. This proposal is for a new script (set of characters):	<input type="checkbox"/> No	
Proposed name of script:		
b. The proposal is for addition of character(s) to an existing block:	<input checked="" type="checkbox"/> Yes	
Name of the existing block:	<i>several (see text)</i>	
2. Number of characters in proposal:	<i>12</i>	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	<input checked="" type="checkbox"/> Yes	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<input checked="" type="checkbox"/> Yes	
b. Are the character shapes attached in a legible form suitable for review?	<input checked="" type="checkbox"/> Yes	
5. Fonts related:		
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>The co-editor of ISO/IEC 9995-7 Amd1 and ISO/IEC 9995-10 (Karl Pentzlin), on request</i>	
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>The font will be in the Public Domain according to SC35 resolution 2010.48</i>	
6. References:		
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<input checked="" type="checkbox"/> Yes	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<input checked="" type="checkbox"/> Yes	
7. Special encoding issues:		
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	<input type="checkbox"/> No	

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see <http://www.unicode.org/Public/UNIDATA/UCD.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

¹ Form number: N3702-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	<i>Partially</i>
If YES explain	<i>See introduction</i>
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?	<i>Yes</i>
If YES, with whom?	<i>Members of SC35 and DIN</i>
If YES, available relevant documents:	<i>ISO/IEC 9995-7:2009 + Amd1 (2012), 9995:2013, DIN 2137:2012</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	<i>Yes</i>
Reference:	<i>All users of the German standard keyboard (T2 as devised in 2012)</i>
4. The context of use for the proposed characters (type of use; common or rare)	<i>common</i>
Reference:	<i>see above</i>
5. Are the proposed characters in current use by the user community?	<i>Yes</i>
If YES, where? Reference:	<i>see text</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	<i>Partially</i>
If YES, is a rationale provided?	<i>Yes</i>
If YES, reference:	<i>To keep them in line with related characters</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	<i>No</i>
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	<i>No</i>
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?	<i>No</i>
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
11. Does the proposal include use of combining characters and/or use of composite sequences?	<i>No</i>
If YES, is a rationale for such use provided?	
If YES, reference:	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	<i>No</i>
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility character(s)?	<i>No</i>
If YES, is the equivalent corresponding unified ideographic character(s) identified?	
If YES, reference:	