

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

Doc Type: Working Group Document

## Title: Proposal to encode two combining marks

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Achim Trunk, Charlotte Wahl

Version: 2nd version

Action: for SEWG and UTC review

Date: May 26, 2026

Requester's reference: LUCP L-2620

### 1. Background – slashed digits in historic mathematical writings

In the history of mathematical notation slashed digits play an important role. They emerged as a means of marking in the course of a calculation process. Unlike slashed or barred letters (e.g. the Scandinavian ø) the base character and the addendum are not written at once, but in two separate actions in the course of the calculation process. The custom of this widely used kind of notation was transferred to printing, when books upon algebra and calculus were in demand. We find digits with a single slash in many treatises – and in specimen books of printing shops. Whereas a single slash applied to digits can be found in old and in modern treatises, markings other than the single slash are almost entirely to be found in historical works. They occur frequently in manuscripts of Leibniz and in editions thereof.

After the expert review of our proposal L-2524 (from September 1, 2025) the prospect of encoding five sets of slashed figures has been discarded and we received the suggestion to propose separate combining elements (or marks) instead.

### 2. Slashed digits and Unicode

We have identified a total of **five** different strike modes occurring with numbers. Three of them can be encoded with sequences of digits in combination with

0338  COMBINING LONG SOLIDUS OVERLAY – (for 1, 2, 3...)

20E5  COMBINING REVERSE SOLIDUS OVERLAY – (for 1, 2, 3...)

20EB  COMBINING LONG DOUBLE SOLIDUS OVERLAY – (for 1, 2, 3...)

For the fourth and fifth strike mode there are no analogue combining marks in the standard so far, therefore we propose new encoding of:

20F1  COMBINING LONG TRIPLE SOLIDUS OVERLAY – (for 1, 2, 3...)

















































20F2  COMBINING SALTIRE OVERLAY – (for 1, 2, 3...)

We follow the SEWG suggestion to allocate the two new characters in the 20D0 block:

**20D0**

**Combining Diacritical Marks for Symbols**

**20FF**

	20D	20E	20F
0	 20D0	 20E0	 20F0
1	 20D1	 20E1	 20F1
2	 20D2	 20E2	 20F2
3	 20D3	 20E3	
4	 20D4	 20E4	
5	 20D5	 20E5	
6	 20D6	 20E6	
7	 20D7	 20E7	
8	 20D8	 20E8	
9	 20D9	 20E9	
A	 20DA	 20EA	
B	 20DB	 20EB	
C	 20DC	 20EC	
D	 20DD	 20ED	
E	 20DE	 20EE	
F	 20DF	 20EF	

### 3. Unicode Character Properties

20F1;COMBINING LONG TRIPLE SOLIDUS OVERLAY;Mn;1;NSM;;;;;N;;;;;  
 20F2;COMBINING SALTIRE OVERLAY;Mn;1;NSM;;;;;N;;;;;

### 4. Bibliography

LAA – refers to: Leibniz, Gottfried Wilhelm: *Sämtliche Schriften und Briefe*. ('Leibniz-Akademie-Ausgabe', many volumes)

LBr – refers to: Leibniz's original correspondence papers, GWLB Hanover

LH – refers to: Leibniz's original manuscripts, GWLB Hanover

Andreäische Buchhandlung: Proben aus der Schriftgießerei. Frankfurt am Main 1834

Bailey, M. A.: Teaching arithmetic. New York 1913

Padberg, Friedhelm: Didaktik der Arithmetik. Mannheim/Wien/Zürich 1986

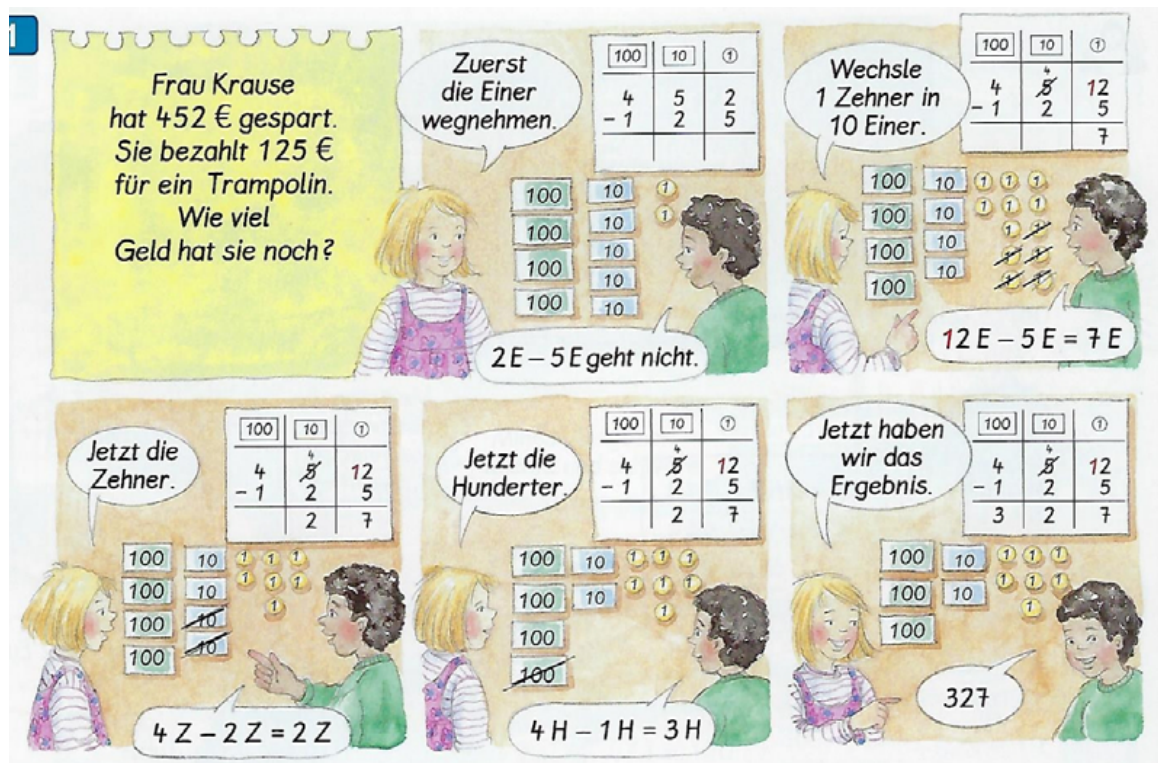
Radatz, Hendrik et al.: Handbuch für den Mathematikunterricht. Hannover 1999

Tartaglia, Nicolò: La seconda Parte Del General Trattato Di Nvmeri, Et Misvre, Venice 1556

Wentworth, George & Smith, David Eugene: School Arithmetics Primary Book. Boston 1919

### 5. Figures and explanations

First, we show a modern sample of the use of single-slashed digits in a math book for children.



Introduction of subtracting numbers using the american method, in a comic strip from a maths book for the 3rd grade (Rinkens & Hönisch 2008, p. 98)





$\langle \quad - \quad \rangle$ $\langle \quad - \quad \rangle$ $\langle \quad - \quad \rangle$ $\langle \quad - \quad \rangle$ $\langle \quad - \quad \rangle$ f - $\rangle$ <del>1899999</del> <del>18888</del> <del>111</del>	$\langle 11 \rangle$ $\langle 231 \rangle$ $\langle 2973 \rangle$ $\langle 37611 \rangle$ $\langle 61897 \rangle$ <del>1434018</del> f 4926 <del>289999</del> <del>2888</del> <del>22</del>	143
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6
<del>11</del>
712
<del>1680</del>
<del>1700</del>
<del>9900</del>
<del>1680</del> 9
<del>168</del> 5
16

f 593

	$\chi$ <del>26</del> <del>298</del> <del>376</del> <del>6182</del> <del>1434344</del> f 496 [bricht ab] <del>28999</del> <del>288</del> <del>2</del>	$\chi$ <del>56</del> <del>88</del> <del>800</del> <del>1181</del> <del>8728</del> <del>143344</del> f (496) <del>22289</del> <del>889</del> <del>9</del>
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$\overline{4962}$ $\overline{159}$ $\overline{44658}$ $\overline{24810}$ $\overline{4962}$ $\overline{788958}$	$\overline{00}$ $\overline{311}$ $\overline{4296}$ $\overline{67884}$ $\overline{788888}$ f 4962 $\overline{111189}$ $\overline{8889}$ $\overline{99}$	$\overline{8}$ $\overline{101}$ $\overline{1673}$ $\overline{88281}$ $\overline{788988}$ f 4962 $\overline{189999}$ $\overline{1888}$ $\overline{11}$
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Examples of COMBINING LONG SOLIDUS OVERLAY, COMBINING LONG DOUBLE SOLIDUS OVERLAY, COMBINING REVERSE SOLIDUS OVERLAY, COMBINING LONG TRIPLE SOLIDUS OVERLAY and COMBINING SALTIRE OVERLAY.

LAA VII-8 p. 223, 224



**ISO/IEC JTC 1/SC 2/WG 2  
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS  
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646<sup>1</sup>**

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

Please read Principles and Procedures Document (P & P) from <http://std.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://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

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

**A. Administrative**

1. Title:	Proposal to encode two combining marks		
2. Requester's name:	Uwe Mayer, Siegmund Probst, David Rabouin, Elisabeth Rinner, Andreas Stötzner, Achim Trunk, Charlotte Wahl		
3. Requester type (Member body/Liaison/Individual contribution):	Individual (work group)		
4. Submission date:	2026-05-26		
5. Requester's reference (if applicable):	LUCPL-2620		
6. Choose one of the following:			
This is a complete proposal:			Yes
(or) More information will be provided later:			

**B. Technical – General**

1. Choose one of the following:			
a. This proposal is for a new script (set of characters):			No
Proposed name of script:			
b. The proposal is for addition of character(s) to an existing block:			Yes
Name of the existing block:	20D0 Combining Diacritical Marks for Symbols		
2. Number of characters in proposal:			2
3. Proposed category (select one from below - see section 2.2 of P&P document):			
A-Contemporary	<input type="checkbox"/>	B.1-Specialized (small collection)	<input checked="" type="checkbox"/>
C-Major extinct	<input type="checkbox"/>	D-Attested extinct	<input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic	<input type="checkbox"/>	G-Obscure or questionable usage symbols	<input type="checkbox"/>
B.2-Specialized (large collection)	<input type="checkbox"/>	E-Minor extinct	<input type="checkbox"/>
4. Is a repertoire including character names provided?			Yes
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?			Yes
b. Are the character shapes attached in a legible form suitable for review?			Yes
5. Fonts related:			
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	Andreas Stötzner		
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	Andreas Stötzner Gestaltung, Klaufügelweg 21, 88400 Biberach/R., Germany, as@signographie.de		
6. References:			
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?			Yes
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?			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)?			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 Unicode Character Database ( <http://www.unicode.org/reports/tr44/> ) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

<sup>1</sup> Form number: N4502-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, 2011-03, 2012-01)

**C. Technical - Justification**

1. Has this proposal for addition of character(s) been submitted before? If YES explain	Yes <i>one char. name has been changed; see L-2606</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.)? If YES, with whom?	Yes Leibniz-Archiv, Forschungsstelle der Leibniz-Edition, Niedersächsische Landesbibliothek (GWLb), Hanover, Göttingen Academy of Science and Humanities in Lower Saxony (DE), Philiumm research group of CNRS (UMR 7219, laboratoire SPHERE) / Université de Paris VII; general: scholars, researchers, authors and editors working in the field of science history and upon editions of historic text corpora (e.g. of G. W. Leibniz, but also many others)
If YES, available relevant documents:	L-2409, L-2410
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	Yes
4. The context of use for the proposed characters (type of use; common or rare) Reference:	Common mainly specialist usage, scholarly, worldwide
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	Yes mainly Europe, Americas; other countries
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	No
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	No
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	No
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	No
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	No
11. Does the proposal include use of combining characters and/or use of composite sequences? 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:	Yes <i>proposal is about combining characters</i> No
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	No
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	No