Universal Multiple-Octet Coded Character Set (UCS)

ISO/IEC JTC 1/SC 2 N4993
ISO/IEC JTC 1/SC 2/WG 2 N5304
Date: 2025-06-27

Source: WG 2 meeting 72, Toki Messe, Niigata, Japan; 2025-06-23/27
Title: Recommendations from WG 2 meeting 72
Action: For approval by SC 2 and for information to WG 2
Status: Adopted at meeting 72 of WG 2
Distribution: ISO/IEC JTC 1/SC 2 and WG 2

Experts accredited (or invited) by the national bodies or liaison organizations for Canada, China, Czech Republic, Germany, India, Japan, Republic of Korea, UK, USA, Vietnam, SC34 (Liaison), SEI - UC Berkeley (Liaison), TCA (Liaison), and the Unicode Consortium (Liaison), participated in the meeting (either in person or via Zoom call -- see attached attendance list) and established consensus on the following recommendations.

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Recommendation M72.01 (Disposition of comments of CD 2)

WG2 recommends that SC2 accept the disposition of comments on CD 2 to 7th edition in document N5339 (SC2 N4991). The following significant changes are noted in the disposition document:

a. Remove three Sidetic characters 1095A..1095C.

b. Add four character name aliases of type "correction":

- BAMUM LETTER PHASE-B PUNGGAAM for 16881 BAMUM LETTER PHASE-B PUNGAAM

- BAMUM LETTER PHASE-B NGGOM for 1688E BAMUM LETTER PHASEB NGOM

- BAMUM LETTER PHASE-C SHETFON for 168DC BAMUM LETTER PHASE-C SETFON

- BAMUM LETTER PHASE-E NGGOP for 1697D BAMUM LETTER PHASE-E NGOP

c. Change the name of the following characters:

- 10EF9 from ARABIC CROWN to ARABIC MARK CROWN
- 1D258 from MUSICAL SYMBOL ARABIC THREE QUARTER TONE FLAT to MUSICAL SYMBOL FLAT WITH DOUBLE STEM
- 1DF43 from LATIN SMALL CAPITAL BARRED E to LATIN LETTER SMALL CAPITAL BARRED E
- 1DF54 from LATIN SMALL LETTER BARRED LATIN CHI to LATIN SMALL LETTER BARRED CHI
- 1DFCD from LATIN SUPERSCRIPT SMALL LETTER TURNED R WITH MID-HEIGHT LEFT HOOK to MODIFIER LETTER SMALL TURNED R WITH MID-HEIGHT LEFT HOOK

- 1DFCE from LATIN SUPERSCRIPT SMALL LETTER SPLIT O to MODIFIER LETTER SMALL SPLIT O
- 1DFCF from LATIN SUPERSCRIPT SMALL LETTER SPLIT U to MODIFIER LETTER SMALL SPLIT U

d. Change the name of 1D25F MUSICAL SYMBOL BUZZ ROLL to MUSICAL SYMBOL COMBINING BUZZ ROLL STEM and change its glyph as suggested in the comments.

e. Add the disunified KP-source form of U+6138 at code point U+2B73F at the end of the CJK Unified Ideographs Extension C block.

f. Add 12 urgently-needed G-source ideographs with code points U+2CEA2 through U+2CEAD at the end of the CJK Unified Ideographs Extension E block.

Consensus

Recommendation M72.02 (CJK Additions and changes for the CD)
WG2 recommends that SC2 accept the following changes for the next CD, based on the WG 2 and IRG documents referenced below:

a. Disunifications
- Add the disunified T-source forms of 16 ideographs by horizontally-extending code points in the CJK Unified Ideographs Extension A (1), Extension B (12), Extension C (1), Extension F (1), and Extension H (1) blocks, based on document IRG N2778.

b. Horizontal extensions
- Add China's 2,145-ideograph horizontal extension, based on document IRG N2729R3.
- Add China's horizontal extension of U+2B73E, based on document IRG N2805R2.
- Add TCA's 12-ideograph horizontal extension, based on document IRG N2779R2.
- Add Vietnam's horizontal extension of U+2CACD, based on document IRG N2798.
- Add UTC's horizontal extension of U+69E9, based on Section 09 of document L2/25-090.

c. Representative glyph changes
- Change the representative glyphs for 10 G-source ideographs, based on document IRG N2747. Note that the G-source representative glyph change for U+2CD98 in the CJK Unified Ideographs Extension E block was reverted, based on Section 11 of document L2/25-090.
- Change the G-source representative glyph for U+48CB in the CJK Unified Ideographs Extension A block, based on Section 07 of document L2/25-009.
- Change the G-source representative glyphs for U+2CC27 and U+2E01D in the CJK Unified Ideographs Extension E and CJK Unified Ideographs Extension F blocks, respectively, based on Section 10 of document L2/25-090.
- Change the representative glyphs for seven G-source ideographs, based on documents IRG N2803R2 and IRG N2807. Note that the G-source representative

glyph change for U+9D56 in document IRG N2803R2 was deferred by the IRG per Recommendation IRG M64.14 in document IRG N2765.

- Change the representative glyphs for 26 G-source ideographs, based on document IRG N2805R2.
- Change the T-source representative glyph for U+2B7C2, based on document IRG N2777.
- Change the representative glyphs for 366 T-source ideographs, based on document IRG N2779R2.
- Change the representative glyphs for three V-source ideographs in the CJK Unified Ideographs Extension J block, based on document IRG N2748.
- Change the V-source representative glyph for U+3153A in the CJK Unified Ideographs Extension H block, based on Section 07 of document L2/25-090.
- Change the representative glyphs for eight V-source ideographs, based on document IRG N2798.
- Change the representative glyphs for three V-source ideographs, based on document IRG N2801.

d. Property value changes
- Change the kIRG_GSource property values of U+827B and U+8280 to G3-682F and G5-673E, respectively, based on Section 01 of document L2/25-090.
- Change 12 kIRG_GSource property values, based on document IRG N2803R2.
- Change the kIRG_TSource property value of U+2B7C2, based on document IRG N2777.
- Change kIRG_TSource, kRSUnicode, and kTotalStrokes property values, based on document IRG N2779R2.
- Move the kIRG_KPSource property value KP1-5FBF from U+7841 to U+2544B, based on document L2/25-050.
- Change three kIRG_VSource property values, based on document IRG N2798.
- Change the kRSUnicode and kTotalStrokes property values for U+25A5A and U+3080C, based on document IRG N2805R2.
- Change the kRSUnicode property value of U+2F936, based on Section 08 of document L2/25-090.
- Change the kRSUnicode and kTotalStrokes property values of U+32EBE, based on document IRG N2801.
- Add "196'.5" to the kRSUnicode property value of U+32C39, based on CN3-034 in document WG 2 N5295.
- Change the syntax of the kTotalStrokes property to allow only one property value, along with the four corresponding kTotalStrokes property value changes, based on document IRG N2711.

Consensus

Recommendation M72.03 (Other Additions and Changes for the CD)

WG2 recommends that SC2 accept the following changes for the next CD:

- Change the name of 05C8 HEBREW POINT SHEVA NA to HEBREW POINT HEAVY SHEVA, based on section 1.2 of L2/25-010
- Change the name of 11B0A DEVANAGARI LETTER SINDHI DDDA to DEVANAGARI LETTER ALTERNATE DDDA, based on section 1.3 of L2/25-010.

Consensus

Recommendation M72.04 (Clauses 24 to 27 references)

WG2 recommends that SC2 accept the recommendation in N5253 that the definitions of the source descriptions given in clauses 24 to 27 of the CD text of ISO/IEC 10646 be replaced with normative references to the relevant Unicode Standard Annexes #38 and #60.

Consensus

Recommendation M72.05 (Radical stroke value updates for Tangut):

WG2 recommends the Project Editor incorporate the updates to the radical stroke value of 197 Tangut ideographs as proposed in document L2/25-120 and the radical stroke value for 17D0B TANGUT IDEOGRAPH-17D0B, as referenced in section 3.4 of L2/25-91R

Consensus

Recommendation M72.06 (Glyph Corrections for Tangut)

WG2 recommends the Project Editor incorporate the glyph corrections in the standard for 18 Tangut ideographs and one Tangut component as proposed in document N5305.

Consensus

Recommendation M72.07 (Glyph corrections to J-source characters)

WG2 recommends the Project Editor revert the changes to J-source glyphs as described in N5296.

Consensus

Recommendation M72.08 (Additions to Khitan Small Script block)

WG2 recommends the Project Editor add five characters 18CD6..18CDA to the Khitan Small Script block, as proposed in N5309 and N5321, and modify the glyph for U+18C3E KHITAN SMALL SCRIPT CHARACTER-18C3E, as described in N5321.

Consensus

Recommendation M72.09 (Jurchen Script)

WG2 recommends that the Project Editor change the character names from "JURCHEN IDEOGRAPH-XXXXX" to "JURCHEN CHARACTER-XXXXX".

Consensus, UK expert abstains

Recommendation M72.10 (Code Charts)
WG2 recommends that the Project Editor explore with ITTF the possibility of moving the UCS code charts from the core text of the CD into an electronic data attachment and, if an acceptable plan can be worked out, to implement that in the CD.

Consensus

Recommendation M72.11 (Progression of CD 2)
WG2 recommends that the Project Editor prepare the text of CD 3 of the 7th edition of the standard, which will include the changes arising from recommendations M72.01 through M72.10 above, along with the final disposition of comments (document N5339), and forward it to the SC2 secretariat to circulate for consultation. The target starting dates are DIS 2026-07-01, FDIS 2027-02-01, IS 2027-07-01.

Consensus

Recommendation M72.12 (Additions and changes in CD 3)
WG2 recommends the Project Editor consider the following additional characters for future encoding in the standard:
- 1C8B CYRILLIC SMALL LETTER YERU WITH CONNECTING BAR, based on L2/25-112
- 208F MODIFIER LETTER HIGH AND LOW VERTICAL LINE, based on L2/25-061
- 113DA TULU-TIGALARI LETTER ARCHAIC II, based on L2/22-260
- 18D1F TANGUT IDEOGRAPH-18D1F, based on N5303
- 1B168 KATAKANA LETTER SMALL ARCHAIC YE, based on L2/25-090
- Five Leibnizian characters, based on L2/25-062:
  1CEF1 LEIBNIZIAN DIVISION SIGN
  1CEF2 LEIBNIZIAN MULTIPLICATION SIGN
  1CEF3 LEIBNIZIAN MULTIPLICATION-DIVISION SIGN
  1CEF4 LEIBNIZIAN FRACTION REDUCTION SIGN-1
  1CEF5 LEIBNIZIAN FRACTION REDUCTION SIGN-2
- 1D280 MUSICAL SYMBOL COMBINING STEM BOW BEHIND BRIDGE, based on L2/25-018
- 1D281 MUSICAL SYMBOL COMBINING STEM BOW ON TOP OF BRIDGE, based on L2/25-018
- 1DF82 LATIN SMALL LETTER W WITH PALATAL HOOK, based on L2/25-077
- 1DF83 LATIN SMALL LETTER N WITH DOUBLE MIDDLE TILDE, based on L2/25-114
- 1DF84 LATIN SMALL LETTER R WITH DOUBLE MIDDLE TILDE, based on L2/25-114

Recommendation M72.13 (Small Seal Script)
WG2 recommends the Project Editor consider adding 11,339 Small Seal characters at code points 38000..3AC4A in a new block in the range 38000... 3AC4F, as described in N5306, N5318R and N5317R3, with the glyphs and data file as shown in N5341, for a future edition in the standard.

Consensus

Recommendation M72.14 (Khitan Large Script)
WG2 recommends that SC2 encourage experts from China, Russia, and UK to collaborate to make progress on Khitan Large Script in the coming year.

Consensus

Recommendation M72.15 (Tai Xaau)
WG2 recommends that SC2 note the progress reflected in N5310 and encourage proposal authors to continue work on the script proposal.

Consensus

Recommendation M72.16 (Other proposals)
WG2 recommends National Bodies and liaison organizations review the following proposals before WG2 meeting #73:
- Tai Xaau (N5310)
- Khitan Large Script (N5319)
- Leibniz proposals (N5336, N5335, N5334, N5333, N5332, N5331, N5330, and N5329)

Consensus

Recommendation M72.17 (Additions to the 7th edition before next WG2 meeting)
WG2 recognizes that some scripts and additional characters which are under preparation as potential additions to the standard could become mature and will have consensus among WG2 experts to include in the standard. The Project Editor should be able to add these to the balloted texts, after exercising due diligence. Candidates include, but are not limited to:
- 20C3 UAE DIRHAM SIGN, based on N5322
- 18D20 TANGUT IDEOGRAPH-18D20, based on N5314

Consensus

Recommendation M72.18 (IRG Convenor)

WG2 recommends to SC2 that Dr. Ken Lunde be re-appointed as IRG Convenor.

Consensus

Recommendation M72.19 (Future meetings)
WG2 endorses the following schedule for future meetings:
WG2 Meeting #73, 2026-06, Paris, France (co-located with SC2)
WG2 Meeting #74, 2027-06, US (tentative), Canada (back-up)
IRG #65, 2025-10-13/17, Guangzhou, China (hybrid)
IRG #66, 2026-03-16/20, Virtual (Webex)
IRG #67, 2026-10-12/16, Tokyo, Japan (hybrid; host SAT)
IRG #68, 2027-03-15/19, Virtual (Webex)

Consensus, UK expert abstains

Appreciation M72.20 (Appreciation to Unicode Consortium)
WG2 thanks the Unicode Consortium and its staff for providing the web site, for its assistance in code chart productions, and other support for WG2.

Acclamation

Appreciation M72.21 (Appreciation to Host)
WG 2 thanks IPSJ/ITSCJ, the Japanese National Body accredited by JISC, for hosting the meeting. In addition, WG 2 thanks Mr. Masaru Takechi for technical support in the meeting room, Dr. Shuichi Tashiro and staff from Toki Messe for providing logistical support before and during this meeting. WG 2 also appreciates IPSJ/ITSCJ for hosting of the enjoyable dinner on Wednesday evening with tasty Japanese Sake provided by Kaishi Professional University.

Acclamation

The following **55** experts accredited (or invited) by **10** national bodies and **5** liaison organizations were present at different times during the meeting, either in person or via zoom call.

Name	Accreditation	Affiliation
Masaru TAKECHI	.SC 2 Chairperson	NHK Foundation
Ayuko NAGASAWA	.SC 2 Secretariat	IPSJ/ITSCJ
Toshiya SUZUKI	.SC34 (liaison)	Hiroshima University
Michel SUIGNARD	.WG 2 Convenor; USA	Unicode, Inc.
Ken LUNDE	IRG Convenor; USA	Apple, Inc.
Karljürgen FEUERHERM	Canada	Wilfrid Laurier University
V.S. (Uma) UMAMAHESWARAN	Canada	Independent
Eddie Antonio SANTOS	Canada	Independent
Joshua TSAI	Canada	Independent
DeLaHunt Jim	Canada	Independent
CHEN, Zhuang	China	CESI
TAO, Yang	China	CESI
SIM, CheonHyeong	China	Independent
LIU, Huidan	China	Institute of Software, Chinese Academy of Sciences
LI, Zhen	China	Nanjing Xiaozhuang University
DAO, Jie	China	Yunnan Minzu University
QI, Ziyuan	China	Yunnan Minzu University
HU, Jiajia	China	Beijing Normal University
WU, Yu	China	The Institute of Ethnology and Anthropology, Chinese Academy of Social Science
LIN, Lin	China	Microsoft (China)
SUN, Bojun	China	The Institute of Ethnology and Anthropology, Chinese Academy of Social Science
Zhaoqin Jiang (Kushim)	China	Independent
LI, Jianmin	China	The First Historical Archives of China
Nu Ermaimaiti Youluwasi	China	Xinjiang University
LIANG Jinbao	China	Inner Mongolia University of Technology
LUO Wenbing	China	
Yi BAI	IRG IWDS Editor	
Henry CHAN	IRG ORT Manager	
Jan KUČERA	Czech Republic	Charles University
Andreas STÖTZNER	Germany	A. Stötzner Gestaltung
Elisabeth RINNER	Germany	Niedersächsische Landesbibliothek Hannover
Siegmund Probst	Germany	Niedersächsische Landesbibliothek Hannover
Deolekar DEVANSH	India	BIS

Swaran LATA	India	BIS
Neha GUPTA	India	BIS
Vijay KUMAR	India	BIS
Shuichi TASHIRO	AH1 Chair; Japan	Kaishi Professional University
Tamaru Kenzaburo	Japan	
Tatuso Kobayashi	Japan	
Takada Tomokazu	Japan	
Masanori Kusunoki	Japan	Digital Agency
Gowoon Kim	Republic of Korea	
Yang, WangSung	Republic of Korea	
Lin-Mei WEI	TCA (Cat. C Liaison)	Chinese Foundation for Digitization Technology/TCA
WANG Yifan	SAT Daizōkyō Text Database (Cat. C Liaison)	
Yen-ling TSENG	TCA (Cat. C Liaison)	
Andrew WEST	UK	Independent
Deborah ANDERSON	USA, UC Berkeley (Cat. C Liaison)	University of California, Berkeley
Anushah HOSSAIN	USA, UC Berkeley (Cat. C Liaison)	University of California, Berkeley
Helena KANSA	USA, Unicode (Cat. A Liaison)	University of California, Berkeley
Peter CONSTABLE	USA, Unicode (Cat. A Liaison)	Microsoft Corp.
Robin LEROY	USA	Google Switzerland GmbH
Raja ADAL	USA	University of Pittsburgh
Hitomi KUDO	USA	
Eiso CHAN	Vietnam	STAMQ; Culture and Art Publishing House