Universal Multiple-Octet Coded Character Set
(UCS)

Source:	WG 2 meeting 64, Kunibiki Messe, Matsue, Shimane, Japan; 2015-10-19/23 IRGN2111
Title:	Recommendations from WG 2 meeting 64
Action:	For approval by SC 2 and for information to WG 2
Status:	Adopted at meeting 64 of WG 2
Distribution:	WG2 meeting 64 (ISO/IEC JTC 1/SC 2 and WG 2)

Experts accredited by the national bodies or liaison organizations for Canada, China, IRG, Japan, SEI - UC Berkeley (Liaison), TCA (Liaison), the United Kingdom, the Unicode Consortium (Liaison), and the USA were present when the following recommendations were adopted (see attached attendance list).

*Character count **120585** in 4th edition*
***101** additions in DAM1 to the 4th edition*
***11630** in PDAM2.1 (end of meeting 63)*
*Character count **132316** (total allocated till end of meeting 63)*

Note: Some of the referenced proposals in this document are contributions from the Unicode Consortium and do not have a WG2 document number.

Observation M64.01 (Amendment 2 changes since meeting 63):
WG2 notes that in addition to the total of **11630** characters listed in recommendation M63.11 (document N4604), progression of Amendment 2 through PDAM 2.2 and to DAM2 stages has resulted in several changes as summarized in document N4665.
The net is that total number of characters that went for DAM2 ballot was **7332.**

count: 7332 additions in Amendment 2

Observation M64.02 (Additions in 5th edition ballot):
WG2 also notes that the balloted text for CD of the 5th edition contained the Amendment 1 and DAM2 content, plus several changes. These changes were due to either from new mature proposals or characters that were moved from PDAM2.2 and PDAM2.3 ballot dispositions. The net is that the total number of characters that got added in the CD was **4684**. N4666 is the reference document.

count: 4684 additions in 5th edition

Recommendation M64.03 (Disposition of ballot comments of DAM 2 to the 4th edition):
WG2 recommends that SC2 accepts the disposition of DAM 2 ballot comments in document N4691. The following significant changes are noted:
a.   The Tamil Supplement block (11FC0…11FFF, **55** characters) is moved out of Amendment 2 and inserted into the CD for 5th edition.
b.   In the Tangut block, 186A2 is removed; two Tangut components (shown in N4667) are added at 18817 and 18818; and various other glyph changes, re-orderings and source reference changes are made.
c.   2828 CJK Ideographs J-Sources were updated.
d.   08E2 is renamed to ARABIC DISPUTED END OF AYAH.

count: 7332-54= 7278 additions in Amendment 2

Recommendation M64.04 (Progression of Amendment 2 to the 4th edition):
WG2 recommends that its project editor prepares the final text of Amendment 2 to the 4th edition of the standard, which will include the changes arising from recommendations **M64.03** above, along with the final disposition of comments (document N4691); and forward it to the SC2 secretariat for processing as an FDAM ballot. The final code charts are in document N4694. The target starting date is modified to: FDAM: 2015-12.

count: 7278 additions in Amendment 2

Recommendation M64.05 (Disposition of ballot comments of CD 5th edition):
WG2 recommends that SC2 accepts the disposition of CD (5th edition) ballot comments in document N4698. The following significant changes are noted:
a.   The Tamil Supplement block (11FC0…11FFF, **55** characters) is moved out of Amendment 2 and inserted into the CD for 5th edition.
b.   Old Italic (based on document N4669):
     Added 1032D;OLD ITALIC LETTER YE
     Added 1032E;OLD ITALIC LETTER NORTHERN TSE, and,
     Changed the name of 1032F to OLD ITALIC LETTER SOUTHERN TSE.
c.   Removed CJK Unified Ideograph 2D138 (USAT-00061) from CJK Extension F; it is unified with 20991.
d.   Removed CJK Unified Ideograph 2CEF1 (JMJ-056848) from CJK Extension F.
e.   Added in Bopomofo block
     312E BOPOMOFO LETTER O WITH DOT ABOVE
     with an annotation that it is BOPOMOFO LETTER E EARLY FORM
     (based on document N4695).

f. Inserted the following **23** ideographs into CJK Extension F:
  UTC-01201 from document N4678,
  JMJ-068048 and JMJ-068049 from document N4680, and,
  20 new ideographs from Macau SAR from document N4679.
g. Removed 1F931 HERO, 1F932 CRIMINAL and 1F941 MAGIC WAND.
h. Entire Nushu block is reordered and moved to new range 1B170…1B2FF, based on Nushu ad hoc report in document N4693 and the accompanying revised chart in document N4697. Several glyphs were changed.
i. Shape of 11A33 ZANABAZAR SQUARE FINAL CONSONANT MARK is changed to a diamond shape.
j. Several Zanabazar Square character names were corrected as proposed by UK ballot comments and the ad hoc report on Mongolian scripts (N4699).
k. Several Soyombo character names were corrected or changed, one character (SOYOMBO TERMINAL MARK-3) was deleted, and three code positions were reserved for future encoding, per ad hoc report and attached revised code chart in document N4699, and in response to UK ballot comments.
(See document N4698 for full list of dispositions and associated changes.)

count: 4684+75 = 4759 additions in 5th edition

Recommendation M64.06 (Additional changes in 5th edition):
WG2 recommends that SC2 accepts the following additional changes in the CD for 5th edition of the standard:
a. Additions
  - Add following two name aliases (based on document N4654 item 10):
    2B7A LEFTWARDS TRIANGLE-HEADED ARROW WITH DOUBLE VERTICAL STROKE
    2B7C RIGHTWARDS TRIANGLE-HEADED ARROW WITH DOUBLE VERTICAL STROKE.
  - Add the following **15** emoji characters with their glyphs based on document L2/15-195R2 and http://www.unicode.org/emoji/charts/emoji-candidates.html (as of 2015-10-23):
    1F927 SNEEZING FACE
    1F939 JUGGLING
    1F941 DRUM WITH DRUMSTICKS;
    1F943 TUMBLER GLASS
    1F944 SPOON
    1F956 BAGUETTE BREAD
    1F957 GREEN SALAD;
    1F958 SHALLOW PAN OF FOOD
    1F959 STUFFED FLATBREAD
    1F98B BUTTERFLY, and,
    1F98C DEER
    (in the Supplemental Symbols and Pictographs block)
    and,
    1F6D2 SHOPPING TROLLEY (in the Transport and Map Symbols block).
  - Add the following **14** sports-related emoji characters with appropriate glyphs from document L2/15-196R4 and http://www.unicode.org/emoji/charts/emoji-candidates.html (as of 2015-10-23):
    1F6F6 CANOE (in the Transport and Map Symbols block),
    and,
    1F938 PERSON DOING CARTWHEEL
    1F93A FENCER
    1F93B MODERN PENTATHLON;
    1F93C WRESTLERS
    1F93D WATER POLO
    1F93E HANDBALL
    1F945 GOAL NET;
    1F946 RIFLE
    1F947 FIRST PLACE MEDAL
    1F948 SECOND PLACE MEDAL
    1F949 THIRD PLACE MEDAL, and,
    1F94A BOXING GLOVE, and, 1F94B MARTIAL ARTS UNIFORM
    (in the Supplemental Symbols and Pictographs block)
  - Add the following **21** Typicon symbols with their glyphs based on document L2/15-173R2:
    i. In the Combining Diacritical Marks Supplement block:
       1DF6 COMBINING KAVYKA ABOVE RIGHT
       1DF7 COMBINING KAVYKA ABOVE LEFT
       1DF8 COMBINING DOT ABOVE LEFT
       1DF9 COMBINING WIDE INVERTED BRIDGE BELOW
    ii. In the Supplemental Punctuation block:
       2E45 INVERTED LOW KAVYKA
       2E46 INVERTED LOW KAVYKA WITH KAVYKA ABOVE
       2E47 LOW KAVYKA
       2E48 LOW KAVYKA WITH DOT
       2E49 DOUBLE STACKED COMMA

iii. In the Supplemental Symbols and Pictographs block:
1F900 CIRCLED CROSS FORMEE WITH FOUR DOTS
1F901 CIRCLED CROSS FORMEE WITH TWO DOTS
1F902 CIRCLED CROSS FORMEE
1F903 LEFT HALF CIRCLE WITH FOUR DOTS
1F904 LEFT HALF CIRCLE WITH THREE DOTS
1F905 LEFT HALF CIRCLE WITH TWO DOTS
1F906 LEFT HALF CIRCLE WITH DOT
1F907 LEFT HALF CIRCLE
1F908 DOWNWARD FACING HOOK
1F909 DOWNWARD FACING NOTCHED HOOK
1F90A DOWNWARD FACING HOOK WITH DOT
1F90B DOWNWARD FACING NOTCHED HOOK WITH DOT.

- Add 09FD BENGALI ABBREVIATION SIGN from document L2/15-172R.
- Add 09FC BENGALI LETTER VEDIC ANUSVARA from document L2/15-161R.
- Add 1CF7 VEDIC SIGN ATIKRAMA (a combining character) from document L2/15-160R.
- Add 1F6D3 STUPA and 1F6D4 PAGODA from document N4661 in the Transport and Map Symbols block.
- Add the following **19** TV symbols with appropriate glyphs from document N4671:
  i. In the Enclosed Ideographic Supplement block:
  1F23B SQUARED CJK UNIFIED IDEOGRAPH-914D
  ii. In the Enclosed Alphanumeric Supplement block:
  1F19B SQUARED THREE D
  1F19C SQUARED SECOND SCREEN
  1F19D SQUARED TWO K
  1F19E SQUARED FOUR K
  1F19F SQUARED EIGHT K
  1F1A0 SQUARED FIVE POINT ONE
  1F1A1 SQUARED SEVEN POINT ONE
  1F1A2 SQUARED TWENTY-TWO POINT TWO
  1F1A3 SQUARED SIXTY P
  1F1A4 SQUARED ONE HUNDRED TWENTY P
  1F1A5 SQUARED LATIN SMALL LETTER D
  1F1A6 SQUARED HC
  1F1A7 SQUARED HDR
  1F1A8 SQUARED HI-RES
  1F1A9 SQUARED LOSSLESS
  1F1AA SQUARED SHV
  1F1AB SQUARED UHD, and,
  1F1AC SQUARED VOD

b. Changes
  - Change the status of Radical/Stroke information associated with ideographs from 'Informative' to 'normative' (based on document N4692); the project editor is to make the appropriate changes to the text of the standard.
  - Accept the proposed glyph changes to the ideographs at 2B5AA, 2B9D7, 2BF4A and 2C88D in document N4682 (subject to verification by IRG).

count: 4759+74 = 4833 additions in CD (5th edition)

Recommendation M64.07 (Progression of 5th edition of 10646):
WG2 recommends that its project editor prepares a revised text of ISO/IEC 10646 (5th edition), which will include the changes arising from recommendations **M64.05** to **M64.06** above, along with the disposition of ballot comments (document N4698); and forward it to the SC2 secretariat for processing as a second CD ballot. The delta code charts will be in document N4702. The target starting dates are modified to: CD2 2015-12 DIS: 2016-04, FDIS: 2016-11. WG2 notes that CJK Extension F2 is a candidate for inclusion in the CD ballot, based on next IRG meeting recommendations.

count: 4833 additions in CD (5th edition)

Recommendation M64.08 (Project subdivision for Amendment 1 to the 5th edition of the standard):
Anticipating the need for encoding additional scripts and characters that will have mature proposals prior to the next SC2 meeting, WG2 recommends to its convener and project editor to generate a new project subdivision proposal for the first amendment to the 5th edition of the standard, and submit it to SC2 for approval. WG2 notes that adding Japanese Hentaigana characters is a candidate for inclusion in Amendment 1. Tentative target starting dates for Amendment 1 to the 5th edition are: PDAM1 2016-04, DAM1 2016-11.

Recommendation M64.09 (Shuishu script):

WG2 invites the authors of document N4696 to revise their proposal on the Shuishu script taking into account the feedback received at this meeting, working with other experts interested in this script.

Recommendation M64.10 (Small Seal script):

WG2 invites the authors of document N4688 to revise their proposal on the Small Seal script taking into account the feedback received at this meeting, working with other experts interested in this script.

Recommendation M64.11 (Review of CJK Unification Rules):

WG2 recommends that IRG reviews its CJK unification rules to minimize the number of glyph variants that are coded as separate characters.

Recommendation M64.12 (Future meetings):

WG2 endorses the following schedule for future meetings:

      WG2 Meeting 65 - 2016-09-26/30, San José, CA, USA (co-located with SC2)
      WG2 Meeting 66 - Late 2017-09 (tentative), China (pending confirmation) (co-located with SC2)
      WG2 Meeting 67 - 2018-09 (Looking for host).

      IRG Meeting 46 - 2016-05-23/27, Beijing, China
      IRG Meeting 47 - 2016-10-17/21, Seoul, Korea; (backup Japan)

Appreciation M64.13 (Appreciation to DKUUG for web site support):

WG2 thanks DKUUG and its staff for its continued support of the web site for WG2 document distribution and the e-mail server.

Appreciation M64.14 (Appreciation to Unicode Consortium for web site support):

WG2 thanks Unicode Consortium and its staff for its support of the web site for WG2 document distribution.

Appreciation M64.15 (Appreciation to Host):

WG2 thanks the national body of Japan (JISC) for hosting the meeting. WG 2 expresses its appreciation to IPSJ/ITSCJ and the Japanese national committee for JTC 1/SC 2, in particular Mr. Shuichi Tashiro, Ms. Ayuko Nagasawa and Ms. Toshiko Kimura, for arranging the meeting facilities and for the administrative support. WG2 expresses its appreciation to IPSJ/ITSCJ, Matsue Convention Bureau, Shimane Prefecture, and Matsue City, for the enjoyable Japanese dinner event held in Yuushien Garden.

*Character count **120585** in 4th edition*
***101** additions in DAM1 to the 4th edition*
***7278** in FDAM2 (end of meeting 64)*
***4833** additions in 2nd CD of 5th edition (end of meeting 64)*
*Character count **132797** (total allocated till end of meeting 64)*

JTC1/SC2/WG2/N4701
2015-10-23
    Recommendations from WG2 meeting 64
Matsue, Shimane, Japan
    Page 4 of 5

The following **37** experts and guests accredited by **6** national bodies and **3** liaison organizations were present at different times during the meeting.

Name	Accreditation	Affiliation
Qin LU	.IRG rapporteur	Hong Kong Polytechnic University
Yoshiki MIKAMI	.SC 2 Chairman	Nagaoka University of Technology
Toshiko KIMURA	.SC 2 Secretariat	IPSJ/ITSCJ
Chui-Hsing CHIU	.TCA (Cat.C Liaison)	Bureau of Standards, Metrology and Inspection
Lin Mei WEI	.TCA (Cat.C Liaison)	Chinese Foundation for Digitization Technology
Suh-Chyin CHUANG	.TCA (Cat.C Liaison)	Bureau of Standards, Metrology and Inspection
Michel SUIGNARD	.WG 2 Convenor; USA	Unicode Inc
V.S. (Uma) UMAMAHESWARAN	Canada	IBM Canada
Daisy LAI	China	Guizhou University
GuoYing LI	China	Beijing Normal University
Liming ZHAO	China	Tsinghua University
Qinjun YAO	China	Institute of Ethnology, Libo
ShiJang WEI	China	Independent
Wushouer SILAMU	China	Xinjiang University
Xin HU	China	Jiangyong Nushu Eco Museum
Zhonghua LIU	China	Nushu Rescue and Protection Leading Group of Jiangyong County
Zhuang CHEN	China	CESI
Michael EVERSON	Ireland	Evertype
Keisuke KOIDE	Japan	METI
Keisuke MUTOU	Japan	IPA
Kiyonori NAGASAKI	Japan	University of Tokyo
Masaru TAKECHI	Japan	ARIB
Shuichi TASHIRO	Japan	IPA
Tatsuo KOBAYASHI	Japan	Meiji University
Tetsuji ORITA	Japan	IBM Japan
Tomokazu TAKADA	Japan	National Language Research Institute
Toshiya SUZUKI	Japan	Hiroshima University
Wataru TAKAGI	Japan	Hitachi Ltd.
Yoichi MIHASHI	Japan	SCREEN Graphic and Precision Solutions Co.,Ltd.
Daniel KOBAYASHI-BETTER	Japan (Guest)	Osaka University
Kenji HIAMOTO	Japan (Guest)	Cabinet Secretariat
Orie ENDO	Japan (Guest)	Independent
Tsutomu YADA	Japan (Guest)	Osaka University
Andrew WEST	UK	Independent
Kenneth WHISTLER	USA	Unicode Inc
Deborah ANDERSON	USA, UC Berkeley (Cat.C Liaison)	UC Berkeley
Peter CONSTABLE	USA, Unicode (Cat.A Liaison)	Microsoft