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Secretariat ISO/IEC JTC 1/SC 2 - IPSJ/ITSCJ (Information Processing Society of Japan/Information Technology Standards Commission of Japan)* Room 308-3, Kikai-Shinko-Kaikan Bldg., 3-5-8, Shiba-Koen, Minato-ku, Tokyo 105-0011 Japan *Standard Organization Accredited by JISC Telephone: +81-3-3431-2808; Facsimile: +81-3-3431-6493; E-mail: kimura @ itscj.ipsj.or.jp
Summary of Voting on
ISO/IEC JTC 1/SC 2 N 3914 :
ISO/IEC 10646:2003/PDAM 4, Information technology -- Universal Multiple-Octet Coded Character Set (UCS) -- AMENDMENT 4: Lanna, Cham, Game Tiles, CJK Unified Ideographs Extension C, and other characters

Q1 : PDAM

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Total (31)  9  4  3  15

*: Approve with comments
#: Acceptance of the reasons and appropriate changes in the text will change the vote to approval.
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<tr>
<td>CN</td>
<td>33 / 2</td>
<td>Table 62 - Row 1A: Lanna</td>
<td>ge</td>
<td>Name of the script: Lanna is a regional name which is named by foreign scholars for a kind of script in Tai land. Actually, the script is used internationally. It is now used or was used in not only Tai Land, but also China, Myanmar and Laos. The script is given different names in different regions although there is no remarkable differences among them. The script is even called in various names rather than Lanna in Tai Land. Thus, another name which can be accepted by all parties is needed.</td>
<td>Not ready yet.</td>
<td></td>
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<tr>
<td>CN</td>
<td>33 / 2</td>
<td>Table 62 - Row 1A: Lanna</td>
<td>te</td>
<td>Characters: The script was improved by users respectively after it was introduced to various regions in south-east Asia. In order to meet the demands of users of the script in various regions, more encoded characters are needed. For use in China, there are about 10 more consonants should be encoded.</td>
<td>A proposal will be submitted to ISO/IEC JTC1/SC2/WG2#50.</td>
<td></td>
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<tr>
<td>CN</td>
<td>33 / 2</td>
<td>Table 236 - Row F0: Mahjong Tiles</td>
<td>te</td>
<td>The following 5 glyphs should be changed to that like traditional Mahjong tiles style: 1F010 MAHJONG TILE ONE OF BAMBOOS (tiao) 1F022 MAHJONG TILE PLUM (mei) 1F023 MAHJONG TILE ORCHID (tan) 1F024 MAHJONG TILE BAMBOO (zhu) 1F025 MAHJONG TILE CHRYSANTHEMUM (ju)</td>
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</table>

1 MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by **)  
2 Type of comment: ge = general  te = technical  ed = editorial  
NOTE Columns 1, 2, 4, 5 are compulsory.
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2 Type of comment: **ge** = general **te** = technical **ed** = editorial  
NOTE Columns 1, 2, 4, 5 are compulsory.

NOTE 2A8AB (source: TE-4633) should be 聽 rather than 聽.

NOTE 2AB23 (source: V04-4839) should be 恨 rather than 恨.

NOTE 2ABB1 (source: V04-4946) should be 扇 rather than 扇.

NOTE 2ABF6 (source: V04-497B) should be 散 rather than 散.

NOTE 2AC09 (source: V04-4A25) should be 斬 rather than 斬.

ISO electronic balloting commenting template/version 2001-10
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## Template for comments and secretariat observations

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ISO electronic balloting commenting template/version 2001-10
Irish comments on PDAM-4 for ISO/IEC 10646:2003
Reference: SC2 N3914
Closes: 2007-03-13
Date: 2007-02-27

Ireland disapproves the draft with the technical and editorial comments given below. Acceptance of these comments and appropriate changes to the text will change our vote to approval.

**Technical comments**

T1. Page 14, Table 62 - Row 1A: Lanna. With reference to ISO/IEC JTC1/SC2/WG2 N3207 “Revised proposal for encoding the Lanna script in the BMP of the UCS”, Ireland requests that the characters 有些 LANNA LETTER KHUN HIGH CHA and 一 LANNA SIGN CAANG be added to the PDAM at positions U+1A29 (moving the following characters down one position to U+1A5F) and U+1AAD respectively. Ireland also requests that the character names as given in N3207 be used for all characters, replacing the names used in the PDAM. (This will correct some errors arising from the PDAM names apparently being taken from N3121 instead of from N3121R.)

T2. Page 18, Table 110 - Row 2D: Cyrillic Extended-A. With reference to ISO/IEC JTC1/SC2/WG2 N3194 “Proposal to encode additional Cyrillic characters in the BMP of the UCS”, Ireland requests that the character names and glyphs for the characters listed in this chart be changed to those shown on pages 16 and 17 of N3194. The names should reflect the UCS names for the Cyrillic base letters, not the Church Slavic names for these characters. The glyphs should be in Roman style (graždanka), not in Slavonic style. This change will also affect the the characters 2DE0 .. 2DF5 in the “List of combining characters” on page 6 of the PDAM.

Regarding the other Cyrillic characters proposed in N3194, Ireland would favour the addition of these to the PDAM, but does not make this a condition for changing our vote to approval.

**Editorial comments**

E1. Page 22, Table 201 - Row 01: Ancient Symbols. Ireland requests that the winding error in the glyph for U+10194 be corrected. We would also like clarification: should the header of the table not be listed as “Row 101”?

E2. Page 24, Table 236 - Row F0: Mahjong Tiles. The glyphs for U+1F010 MAHJONG TILE ONE OF BAMBOOS, U+1F022 MAHJONG TILE PLUM, U+1F023 MAHJONG TILE ORCHID, and U+1F025 MAHJONG TILE CHRYSANTHEMUM, should be improved. We propose the following glyphs (showing the tile for U+1F024 MAHJONG TILE BAMBOO for comparison with the other flowers):

![Mahjong Tiles]

The bird represents a sparrow, or Chinese máquè, another name for májiàng ‘mahjong’. We would also like clarification: should the header of the table not be listed as “Row 1F0”?
Japan votes against SC2 N3914 (ISO/IEC 10646:2003 PDAM 4) with the following comments. Japan will change its vote if they are accepted accordingly.

JP1 (Technical) Removal of implementation levels
Japan supports the idea of removing implementation levels from ISO/IEC 10646. However, the way the standard is revised to do so under the current draft is considered inappropriate. The following arrangements are suggested:

- All references to the term "implementation level" should be removed from normative text, including historical references to implementation level 3.
- Informative references to "implementation level" should also be removed as much as possible.
- The control functions for identification of coded representation forms with implementation level 3 should be redefined as identification of coded representation forms, and the phrase "with implementation level 3" should be removed from the definitions.
- Japan wants to add an informative annex to explain implementation level in the past standards, including something for control functions to identify implementation levels 1 and 2, the unique spelling rule (for Indic scripts), and collection's "automatic removal" based on designated implementation levels.

JP2 (Technical) Correction to CJK Unified Ideographs Extension C
Japan found some problems in the current code chart for CJK Unified Ideographs extension C. Details of the problems are listed in the attachment. The code chart should be updated. Japan wants WG2 to instruct IRG to evaluate the attached comments and to provide corrected code chart.

JP3 (Editorial) V source reference
In 27.3, change "V4-4876" to "V04-4876" in the figure to align with the actual code chart.

(END OF DOCUMENT)
In CJK extension C code chart, V-column glyphs listed below have some differences from IRG's internal review document. Japan requests IRG to verify and confirm the shapes.

2a719, 2a71b, 2a77d, 2a825, 2a949  
2aa11, 2aa84, 2ab23, 2abf6, 2ae25  
2aebe, 2aec3, 2af7c, 2b000, 2b028  
2b09b, 2b0ce, 2b16c, 2b187, 2b23c  
2b3bf, 2b40e, 2b642, 2b644

2abb1 V-column glyph is wrong. Japan request IRG to confirm.
2b151 U-column glyph is wrong. Japan request IRG to confirm.

The chart has some printing problems. In particular, some code position values on "Ucode" column lack the last hexadecimal digit. For example, the code position "2AAAA" is printed as "2AAA". The overall margins and/or positionings should be adjust appropriately.
The REVISED UK Vote on SC2 N3914 is as follows:

The UK votes to DISAPPROVE the amendment, with the following technical and editorial comments. If our comments are satisfactorily resolved we will change our vote to APPROVAL.

TECHNICAL COMMENTS

T.1 page 15 Lanna

We request the following changes to Lanna.

1. Rename the following characters. NB The changes marked with an asterisk are not reflected in N3207.

- 1A22   LANNA LETTER HIGH XA  =>  LANNA LETTER HIGH KXA
- 1A23   LANNA LETTER LOW GA  =>  LANNA LETTER LOW KA
- 1A24   LANNA LETTER LOW KHA  =>  LANNA LETTER LOW KXA
- 1A25   LANNA LETTER LOW KHAA  =>  LANNA LETTER LOW KHA
- 1A26   LANNA LETTER LOW NGA  =>  LANNA LETTER NGA *
- 1A28   LANNA LETTER HIGH SA  =>  LANNA LETTER HIGH CHA
- 1A29   LANNA LETTER LOW CHA  =>  LANNA LETTER LOW CA
- 1A2A   LANNA LETTER NORTHERN THAI LOW CHA  =>  LANNA LETTER NORTHERN THAI LOW CA
- 1A2D   LANNA LETTER LOW SAA  =>  LANNA LETTER LOW CHA
- 1A2E   LANNA LETTER HIGH NYA  =>  LANNA LETTER NYA *
- 1A2F   LANNA LETTER LATA  =>  LANNA LETTER RATA
- 1A30   LANNA LETTER HIGH LATHA  =>  LANNA LETTER HIGH RATHA
- 1A31   LANNA LETTER LADA  =>  LANNA LETTER DA
- 1A32   LANNA LETTER LOW LATHA  =>  LANNA LETTER LOW RATHA
- 1A33   LANNA LETTER LANA  =>  LANNA LETTER RANA
- 1A41   LANNA LETTER LOW NYA  =>  LANNA LETTER LOW RATHA
- 1A42   LANNA LETTER YA  =>  LANNA LETTER HIGH YA
- 1A44   LANNA LETTER RU  =>  LANNA LETTER RUE
- 1A46   LANNA LETTER LU  =>  LANNA LETTER LUE
- 1A48   LANNA LETTER HIGH SAA  =>  LANNA LETTER HIGH SHA
- 1A4A   LANNA LETTER HIGH SSAA  =>  LANNA LETTER HIGH SA
- 1A4C   LANNA LETTER LAA  =>  LANNA LETTER LLA
- 1A56   LANNA LETTER LE  =>  LANNA LETTER LAE
- 1A5A   LANNA SIGN KHUN MAI KANG LAI  =>  LANNA SIGN KHUEN MAI KANG LAI *
- 1A5D   LANNA CONSONANT SIGN HIGH LATHA OR LOW PA  =>  LANNA CONSONANT SIGN HIGH RATHA OR LOW PA
- 1A6D   LANNA VOWEL SIGN ONG  =>  LANNA VOWEL SIGN O
- 1A6E   LANNA VOWEL SIGN OH  =>  LANNA VOWEL SIGN OA BELOW
- 1A71   LANNA VOWEL SIGN EE  =>  LANNA VOWEL SIGN AE
- 1A75   LANNA VOWEL SIGN O  =>  LANNA VOWEL SIGN OA ABOVE
- 1A79   LANNA SIGN KHUN TONE-3  =>  LANNA SIGN KHUEN TONE-3 *
- 1A7A   LANNA SIGN KHUN TONE-4  =>  LANNA SIGN KHUEN TONE-4 *
- 1A7B   LANNA SIGN KHUN TONE-5  =>  LANNA SIGN KHUEN TONE-5 *
- 1A7C   LANNA SIGN LAHAAM  =>  LANNA SIGN RA HAAM
- 1AA0   LANNA SIGN WIANGWAAK  =>  LANNA SIGN WIANG
1AA1   LANNA SIGN WIANG => LANNA SIGN WIANGWAAK
1AA6   LANNA SIGN REVERSED ROTATED LANA => LANNA SIGN REVERSED ROTATED RANA
1AA8   LANNA SIGN GAAN => LANNA SIGN KAAN
1AA9   LANNA SIGN GAANGUU => LANNA SIGN KAANKUU
1AAA   LANNA SIGN SATGAAN => LANNA SIGN SATKAAN
1AAB   LANNA SIGN SATGAANGUU => LANNA SIGN SATKAANKUU

2. Move the following characters, as per N3207:

1A29..1A5E => 1A2A..1A5F

3. Add the following new characters, as per N3207:

1A29   LANNA LETTER KHUEN HIGH CHA (NB suggested name differs from N3207)
1AAD   LANNA SIGN CAANG

4. There is some doubt over the need to encode the following two characters and whether they are equivalent to the decomposition sequences assigned to them in N3207. We therefore suggest removing them from Amd.4 pending further investigation.

1A65   LANNA VOWEL SIGN AM
1A66   LANNA VOWEL SIGN TALL AM

5. Move the following characters to fill the gap left by the removal of 1A65..1A66:

1A67..1A7D => 1A65..1A7B

T.2 page 48 : CJK Unified Ideographs Extension C U+2A988

We believe that according to the CJK unification rules U+2A988 should be unified with the already encoded U+2177B. The difference between U+2177B and U+2A988 is that the righthand component of U+2177B is written as U+4E8F whereas the righthand component of U+2A988 is written as U+4E90. The following examples demonstrate that U+4E8F and U+4E90 are unifiable components:

U+2A746. In Amd.4 source glyph TC-4375 is written with U+4E90, whereas source glyph V04-4126 is written with U+4E8F.


Furthermore, ISO/IEC 10646:2003 Annex S (page 1413) gives U+6C5A (U+4E90 component) and U+6C61 (U+4E8F component) as an example of two characters which would have been unified according to the unification rules given
in S.1 but for the fact that they come under the source separation rule (S.1.6).

We therefore request that U+2A988 be removed from the amendment, and the characters 2A989..2B77A be renumbered accordingly.

T.3 page 65: CJK Unified Ideographs Extension C U+2ABB1

The glyph shown for U+2ABB1 (V04-4946) is completely incorrect (wrong radical and five strokes instead of 14). The source glyph is also shown incorrectly in N3134A1 page 67 (#09682), although the reference image is shown correctly here. In IRG N898 <http://www.cse.cuhk.edu.hk/~irg/irg19/N898-VietNam_C1.zip> page 11 V04-4946 is shown with the correct source glyph.

We therefore request that that the glyph for U+2ABB1 be changed to reflect the source glyph V04-4946 given in the original submission by Vietnam.

T.4 page 106 CJK Unified Ideographs Extension C U+2B0CE

The glyph shown for U+2B0CE (V04-5035) appears to be incorrect (nine residual strokes instead of eleven). The source glyph is also shown incorrectly in N3134A2 page 140 (#16060), although the reference image is shown correctly here. In IRG N898 <http://www.cse.cuhk.edu.hk/~irg/irg19/N898-VietNam_C1.zip> page 18 V04-5035 is shown with the correct source glyph (eleven residual strokes rather than nine).

We therefore request that that the glyph for U+2B0CE be changed to reflect the source glyph V04-5035 given in the original submission by Vietnam.

T.5 page 91 CJK Unified Ideographs Extension C U+2AEEF

The glyph for U+2AEEF is the same as the glyph for the compatibility ideograph U+2F927, which is canonically equivalent to U+24814. The righthand component of U+2AEEF (i.e. U+8C9F) is a common glyph variant of the righthand component of U+24814 (i.e. U+54E1), and we believe that these two components are normally unifiable. For example, ISO/IEC 10646:2003 Annex S (page 1411) gives U+570E (U+8C9F component) and U+5713 (U+54E1 component) as an example of two characters which would have been unified according to the unification rules given in S.1 but for the fact that they come under the source separation rule (S.1.6). Nevertheless, there are some examples of CJK-KB characters with the U+8C9F component that do correspond to characters with the U+54E1 component (U+202CF & U+508A, U+21396 & U+5864, U+27D80 & U+27D8A, U+291B9 & U+291C2, U+2A0F0 & U+9DB0), but in none of these cases is there a corresponding compatibility ideograph.
We therefore request clarification as to whether it is necessary and appropriate to encode U+2AEEF in addition to U+2F927.

EDITORIAL COMMENTS

E.1 page 4 : Page 1351, annex A.1

<quote>
In the list of collections numbers and names, after 307 UNICODE 5.0 see A6.5 *
insert the new entry:
308 UNICODE 5.1 see A6.6 *
</quote>

308 Unicode 5.1 is already defined in Amd.3. This should be:

<quote>
308 UNICODE 5.1 see A6.6 *
insert the new entry:
309 UNICODE 5.2 see A6.7 *
</quote>

E.2 pages 4-5 : Page 1357, Annex A.6 Unicode Collections

<quote>
At the end of Annex A.6, add new clause A.6.6 as follows.

A.6.6 308 UNICODE 5.1
308 The fixed collection UNICODE 5.2 consists of a fixed collection. The collection list is arranged by planes as follows.
</quote>

This should be:

<quote>
At the end of Annex A.6, add new clause A.6.7 as follows.

A.6.7 309 UNICODE 5.2
309 The fixed collection UNICODE 5.2 consists of a fixed collection. The collection list is arranged by planes as follows.
</quote>

At bottom of page 5

<quote>
NOTE - The collection 309 UNICODE 5.1 can also be determined by using another fixed collection from A.6 and several ranges of code positions.
Plane 00-10
Collection number and name
NOTE - The collection 309 UNICODE 5.2 can also be determined by using another fixed collection from A.6 and several ranges of code positions.

Collection number and name
308 UNICODE 5.1

E.3 page 25 - Table 236 - Row F0: Mahjong Tiles

1F02A MAHJONG TILE JOKER

We suggest adding the Chinese name of this tile as an annotation:
1F02A MAHJONG TILE JOKER (baida)

E.4 pages 28-159: CJK Unified Ideographs Extension C

The codepoints for the following ranges of characters are printed with the last hexadecimal digit missing:

2AAAA..2AAAF printed as 2AAA (page 57)
2AABA..2AABF printed as 2AAB (page 57)
2AAC..2AACF printed as 2AAC (page 58)
2AAD..2AADF printed as 2AAD (page 58)
2AAEA..2AAEE printed as 2AAE (page 59)
2AAFA..2AAFD printed as 2AAF (page 59)
2ABAA..2ABAF printed as 2ABA (page 65)
2ABBA..2ABBF printed as 2ABB (page 65)
2ABCA..2ABC printed as 2ABC (page 66)
2ABDA..2ABDF printed as 2ABD (page 66)
2ABEA..2ABEE printed as 2ABE (page 67)
2ABFA..2ABFD printed as 2ABF (page 67)
2ACA..2ACAF printed as 2ACA (page 73)
2ACBA..2ACBF printed as 2ACB (page 73)
2ACCA..2ACCF printed as 2ACC (page 74)
2ACDA..2ACDF printed as 2ACD (page 74)
2ACEA..2ACEE printed as 2ACE (page 75)
2ACFA..2ACFD printed as 2ACF (page 75)
2ADAA..2ADAF printed as 2ADA (page 81)
2ADBA..2ADB printed as 2ADB (page 81)
2ADCA..2ADC printed as 2ADC (page 82)
2ADDA..2ADD printed as 2ADD (page 82)
2ADEA..2ADEC printed as 2ADE (page 83)
2ADF..2ADFD printed as 2ADF (page 83)
The US National body is voting No with comments on the following SC2 ballot. Satisfying technical comment T.1 would change the vote into a Yes.

SC2N3914: Information technology -- Universal Multiple-Octet Coded Character Set (UCS) -- AMENDMENT 4: Lanna, Cham, Game Tiles, CJK Unified Ideographs Extension C, and other characters

**Technical Comments:**

**T.1 Character removal (Lanna)**

The US is asking for the removal of the following characters:

1A65 LANNA VOWEL SIGN AM
1A66 LANNA VOWEL SIGN TALL AM

The rationale for their inclusion is provided in WG2 N3121:

> The presence of [LANNA VOWEL SIGN] AM (and [LANNA VOWEL SIGN] TALL AM) follows the Thai convention of ensuring that a final consonant is not stored before the vowel it follows. This is the only situation in which it could occur and so [LANNA VOWEL SIGN] AM is encoded to alleviate the problem.

It is again clarified in WG2 N3207:

> The AM characters are an example of how sometimes more than one solution can be proposed for an encoding problem. It could be argued that these are “duplicate” characters, though the compatibility decomposition mitigates against that. One of the chief problems is that Northern Thai treats AM similarly to Thai AM; it places the MAI KANG glyph to the left of the -AA vowel (whether over the previous cluster or between the clusters): 𢘈, 𢘉. In Khün and Lue, the MAI KANG render the MAI KANG over the -AA vowel: 𢘈, 𢘉. Without an encoded AM, it would be likely that Northern Thai users would confuse AA + MAI KANG and MAI KANG + AA, even though the latter is logically incorrect for the underlying phonemes. This is not a problem for Khün and Lue, which treat it as a vowel + final, but Northern Thai users think of it as equivalent to Thai AM.

Potentially, MAI KANG and AA may also occur with MAI KANG properly preceding AA, in different syllables.
For example /kam.wa:/ might be written говорить KAL + MAI KANG + TONE-1 + SAKOT + WA + TALL AA while /kwa:m/ would be written говориться говорить = KAL + SAKOT + WA + TONE-1 + TALL AM.

The explicitly-encoded AM gets around the problems of the re-ordering and ligation that would have to be solved if there were no AM, and would add a complexity that is not present in any of the surrounding scripts that contribute to the encoding milieu [sic] of the intended user community.

However all that long and detailed explanation does not remove the fact that these two characters are in fact equivalent to sequences of characters which are also proposed for encoding in the same document.

<\U+1A63, \U+1A76> for Lanna Vowel Sign AM, and
<\U+1A64, \U+1A76> for Lanna Vowel Sign Tall AM.

Proposing compatibility decomposition makes them even less useful as they will be filtered out by all processes using normalization form KC. It also makes them unsuitable for identifiers where the alternate sequences would be the only allowed representation.

In all cases, duplicate encoding should not happen in new proposals.

**T.2 Addition of 2 Lanna characters**

The US is also supporting the addition of the following Lanna characters as proposed by document WG2 N3207:

1A29 Lanna Letter Khun High Cha
1AAD Lanna Sign Caang

**T.3 Name and glyph changes for the new Cyrillic Extended-A**

The US is in favor of the glyph and name changes as proposed in WG2 N3194 for the characters in the range U+2DE0..U+2DF5 (code position as originally presented in document SC2 N3914).

**T.4 Addition of 7 CJK Unified Ideographs**

The US is also supporting the addition of 7 CJK Unified Ideographs as proposed by document L2/07-67 (WG2 TBD) in positions U+9FBC through U+9FC2. At its last meeting, the IRG did not object to the fast-tracking of those characters, nor to their inclusion in Amendment 4. However, the IRG asked that those seven characters not be interleaved in Extension C, hence the proposed code points.

These ideographs are present in the K-JIS and Sha-ken character collections. The K-JIS collection is developed by 共同通信社 和 配信先新聞社 for writing newspaper articles in Japan. The Sha-ken collection is part of a proprietary typesetting system widely used in Japan. These characters are also present in the Adobe-Japan1 collection, which is the basis for many desktop fonts, and at the time of this proposal are the only characters of that collection not present in Unicode / ISO/IEC 10646.

---End of US comments