

ISO/IEC JTC1/SC2/WG2
Coded Character Set
Secretariat: Japan (JISC)

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Comments were received from the following members: China, Ireland, Japan, Mongolia, UK, and USA. The following document is the disposition of those comments. The disposition is organized per country.

Note – With some minor exceptions, the full content of the ballot comments has been included in this document to facilitate the reading. The dispositions are inserted in between these comments and are marked in **Underlined Bold Serif text**, *with explanatory text in italicized serif*.

China: Positive with comments

Technical comments:

T1. Zanabazar Square and Soyombo

We have no comments on these because we have not found appropriate expert yet.

Propose noted

T2. Khitan Small Script

We know that the clustering model of the Khitan Small Script is still controversial, thus we request the removal of 18CFE KHITAN SMALL SCRIPT HORIZONTAL JOINER and 18CFF KHITAN SMALL SCRIPT VERTICAL JOINER from the PDAM pending further study and consensus.

Propose acceptance

See also comment T5 from UK and T1 from Ireland.

See disposition of the UK comment.

T3. Xiangqi game symbols (Enclosed Ideographic Supplement)

a) 3 spelling mistakes:

1F28B: The description “= hei pa” should be “= hei pao”. 炮 is pronounced “pao”.

1F281: The description “= hong bing” should be “= hong zu”. 卒 is pronounced “zu”.

1F28D: The description “= hei zu” should be “= hei bing”. 兵 is pronounced “bing”.

Propose acceptance in principle

See also comment T7 from UK and T2 from Ireland.

The comment from Ireland shows the pinyin annotation with diacritical marks. If the encoding goes to the other model of encoding game pieces with alternative presentation, we may prefer to remove the pinyin annotation because they are related to the exact ideographs used in the presentation. Or alternatively include both annotations.

b) We also recommend encoding Xiangqi game symbols as “Symbols” like Chess symbols and Japanese Chess symbols, or in a block “Game Symbols”.

WG2 discussion

See also comment T7 from UK and T2 from Ireland.

T4. Supplemental Symbols and Pictographs

We request information and analysis estimate how many dinosaur symbols we need, thus we suggest postponing 1F995 SAUROPOD and 1F996 T-REX.

WG2 discussion

See also T9 from Ireland (and its disposition) and comment T14 from UK.

Ireland: Negative

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

Technical comments:

T1. Page 75, Row 18B0: Khitan Small Script

While the encoded characters for the Khitan Small Script are not controversial, the appropriate encoding model for constructing syllable clusters has not been agreed. The characters under ballot were apparently approved by the UTC, but the utility of those characters, their advantages and disadvantages, and the need for any formatting characters, or for these formatting characters, or for other formatting characters is not agreed by the user community. Ireland requests the removal of 18CFE KHITAN SMALL SCRIPT HORIZONTAL JOINER and 1FCFF KHITAN SMALL SCRIPT VERTICAL JOINER from the PDAM pending further study and consensus.

Propose acceptance

See also comment T2 from China, T5 from UK.

See disposition of UK comment.

T2. Page 93, Row 1F20: Enclosed Ideographic Supplement, Xiàngqí game pieces

Ireland requests that all of the characters from 1F270..1F28D be removed from the PDAM. There are two models for representation of Xiàngqí game pieces in the UCS: one is by representing each of the CJK glyph variants as a unique circled ideograph to represent different piece glyphs, and the other would be by representing only 14 characters based on piece semantics. The current ballot represents the first of these two models. Feedback on this has suggested that, for purposes of interchange of xiàngqí game data, a glyph-based encoding is not advantageous. We recommend the following characters be encoded, in a block “Game symbols” which we would expect to also include the “Fairy Chess” characters of N4728R2 should those characters be accepted for eventual encoding.

Symbols used in Chinese chess (xiàngqí) notation

帥	1FA60	RED XIANGQI GENERAL = hóng shuài • design typically shows 5E25 帥 or 5E05 帅 • design sometimes shows 5C07 將 (Yuan dynasty)
仕	1FA61	RED XIANGQI MANDARIN = hóng shì • design typically shows 4ED5 仕 • design sometimes shows 58EB 士
相	1FA62	RED XIANGQI ELEPHANT = hóng xiàng • design typically shows 76F8 相 • design sometimes shows 8C61 象 (Yuan dynasty)



- 1FA63 RED XIANGQI HORSE
= hóng mǎ
• design typically shows 99AC 馬 or 9A6C 马
• design sometimes shows 508C 偶



- 1FA64 RED XIANGQI CHARIOT
= hóng jū
• design typically shows 8ECA 車 or 8F66 车
• design sometimes shows 4FE5 俥



- 1FA65 RED XIANGQI CANNON
= hóng pào
• design typically shows 70AE 炮 or 792E 礮
• design sometimes shows 7832 砲
• design sometimes shows 5352 包 (Ming dynasty)



- 1FA66 RED XIANGQI SOLDIER
= hóng bīng
• design typically shows 5175 兵
• design sometimes shows 5352 卒 (Yuan and Ming dynasties)



- 1FA67 BLACK XIANGQI GENERAL
= hēi jiāng
• design typically shows 5C07 將 or 5C06 将



- 1FA68 BLACK XIANGQI MANDARIN
= hēi shì
• design typically shows 58EB 士



- 1FA69 BLACK XIANGQI ELEPHANT
= hēi xiàng
• design typically shows 8C61 象



- 1FA6A BLACK XIANGQI HORSE
= hēi mǎ
• design typically shows 99AC 馬 or 9A6C 马



- 1FA6B BLACK XIANGQI CHARIOT
= hēi jū
• design typically shows 8ECA 車 or 8F66 车



- 1FA6C BLACK XIANGQI CANNON
= hēi pào
• design typically shows 7832 砲
• design sometimes shows 70AE 炮



- 1FA6D BLACK XIANGQI SOLDIER
= hēi zú
• design typically shows 5352 卒
• design sometimes shows 5175 兵 (Yuan and Ming dynasties)

WG2 discussion

See also comment T3 from China and T7 from UK. The second model was the one originally proposed in document WG2 N4748 where the encoding was based on piece semantics. After discussion, the first model based on glyph representation was adopted following document WG2N4766. Going back to the original mode requires a new discussion, taking into account that all comments on that topic seem to prefer the original model (game piece).

Note also that the pinyin annotation may require more work, because in some cases (like the soldiers), the pronunciation varies depending on the glyph represented in the game piece.

T3. Page 77, Row 1B00: Kana Supplement

Ireland believes that the character names used to describe the Hentaigana are confusing and not particularly useful: they have been named with simple serial numbers which don't mean anything, while the actual identifying characteristic has been shunted to an informative note. This departs from the precedent set by other UCS characters which are identified by reference to a base CJK character. In the block "Enclosed Ideographic Supplement" for example, characters are named according to the pattern 1F217 囿 SQUARED CJK UNIFIED IDEOGRAPH-5929, with an informative note "≈ <square> 5929 天". We do not believe that names like HENTAIGANA LETTER SU-1, SU-2, SU-3, SU-4, SU-5, SU-6, SU-7, and SU-8 properly identify the characters in question. We believe that the naming convention detailed below is more accurate, more useful to users for the identification of characters, and more in keeping with the UCS naming conventions. Where a single source has more than one reflex, -A, -B, etc can be added to the character name.

The advantage to this naming system is clear: if someone wants to find the hentaigana that is derived from a particular kanji then it will be easy to find in a list of character names if the character names include the code point for the source kanji. Otherwise other sources would have to be consulted, which is not advantageous for a relatively small set of characters like this one. An example range of these characters is given below. Ireland has a corrected names list available for use by the editor.

亨	1B06E	HENTAIGANA LETTER TE-4EAD	
			• derived from 4EAD 亨
低	1B06F	HENTAIGANA LETTER TE-4F4E	
			• derived from 4F4E 低
傳	1B070	HENTAIGANA LETTER TE-50B3	
			• derived from 50B3 傳
天	1B071	HENTAIGANA LETTER TE-5929	
			• derived from 5929 天
天	1B072	HENTAIGANA LETTER TE-5929-A	
			• derived from 5929 天
天	1B073	HENTAIGANA LETTER TE-5929-B	
			• derived from 5929 天
帝	1B074	HENTAIGANA LETTER TE-5E1D	
			• derived from 5E1D 帝
互	1B075	HENTAIGANA LETTER TE-5F16	
			• derived from 5F16 互
轉	1B076	HENTAIGANA LETTER TE-8F49	
			• derived from 8F49 轉

Propose non acceptance

Making a parallel to the enclosed ideographic supplement block where characters have indeed in their name the reference code point is a bit misleading. In that block, the glyphs of the enclosed characters are identical to the reference code point. In this case, there is only a limited similarity. At a minimum, Japanese experts would have to be consulted before making such a change.

T4. Page 97, Row 1F30: Miscellaneous Symbols and Pictographs, JTC1/SC2 UTC synchronization issues

Ireland is concerned that the balance between JTC1/SC2 and the UTC has become unstable with regard to the invention and maintenance of symbol characters, some of which are used as emoji in coloured fonts. A variety of glyph changes has been proposed in this PDAM, but there has been no SC2 or WG2 document giving rational for these changes, and while some of them can be considered reasonable, in several cases either the glyph proposed seems simply to be wrong, or is inappropriate for one or more reasons. We do not oppose such improvements in principle, but we do believe that there should be an obligation for the UTC to provide sufficient information to SC2 regarding such non-trivial changes, just as SC2 National Bodies and appointed experts are expected to do so for the UTC. A large number of new symbols has also been added in the PDAM, without attestation; some of these are clearly members of sets which would be seriously incomplete were only the proposed subset to be encoded. Again, Ireland is concerned with coherent sets of symbols, and realizes that the status of any character as an emoji is a different matter. But it is symbol characters, not emoji, that are being requested in the PDAM.

Ireland believes that if the Emoji Subcommittee of the UTC has the right to invent characters with little or no attestation because they judge that there is some potential use for them based on recommendations from the general public, then members of SC2 have the right to ensure that the characters proposed be subject to the same scrutiny to which the original Japanese telephone company symbols were when they were proposed for encoding. In that case, for example, a number of animals were proposed because they were a part of one or more of the source character sets. Ireland and Germany in particular noticed, for instance, that the set of animals used to define the Asian Zodiac in various countries was incomplete, and proposed additions in ballot comments to complete the set. This was accepted by SC2 and the UTC, and the additions were published in the standard in 2010.

This precedent was a good one, and we believe that since the process for creation of symbol characters to be used as emoji is just as subjective now as it was when the staff of SoftBank, KDDI, and DoCoMo were devising bitmaps in the late 1990s, and since these symbols are to be added to the International Standard, oversight of SC2 should not be subordinate to that of the UTC in this area. Ireland acknowledges that the assignment of the “Emoji Property Value” to any characters is reasonably a matter for the UTC because of industry implementation of these characters. The content of symbol sets, however, belongs to both committees, not just to a subcommittee within the UTC. Regardless of how diligently the Emoji Subcommittee may do their work, it remains the case that the UCS is the responsibility of both SC2 and the UTC, and SC2 shall not be expected to give a rubber-stamp on this category of coded character (pictorial graphic symbols).

Precedent for urgently required characters has been made for currency signs, and in an exceptional case for the Fitzpatrick emoji modifiers. Ordinary symbols are not “urgent”; but if they are to be treated as such, then it is right for the same kind of input for revision and augmentation that SC2 offered the UTC in 2010 be offered and accepted today.

Ireland recognizes that the inclusion of a symbol in the UCS does not automatically ensure the elevation of that character to usage as an emoji. Indeed, while Ireland proposed the inclusion of 1F594 🏳️ REVERSED VICTORY HAND, 1F595 🏴 REVERSED HAND WITH MIDDLE FINGER EXTENDED, and 1F596 🏶 RAISED HAND WITH PART BETWEEN MIDDLE AND RING FINGERS, all of which were accepted for encoding, though subsequently the first of these was never given the “Emoji Property Value”. Perhaps this was an oversight, or perhaps it was intentional. Ireland does understand that production and implementation of emoji (fonts, input methods, etc.) brings costs with it. Nevertheless, an incomplete set of invented characters is not ideal, and for this reason, in our ballot comments here, we will be proposing to increase the number of symbol characters somewhat. The

UTC may wish to review those characters for suitability of use as emoji, but even if they are not used as emoji, they should be encoded in order that the set of pictorial graphic symbols be balanced and relatively complete.

Ireland requests that SC2 acknowledge precedent with regard to proposed symbol additions in this category, and that National Bodies look favourably on the characters proposed to augment the set of characters proposed here. Failing that, we shall have to protest that these characters have not been formally proposed for inclusion in the standard via SC2 or WG2 documents, which prevents them from being properly evaluated.


We note that “Completeness” is a criterion for emoji. “Does the proposed pictograph fill a gap in existing types of emoji?” is a factor for inclusion. This factor is no less important for National Bodies reviewing proposed UCS symbols than it is for the Emoji Subcommittee.

Propose noted



This is mostly out of scope as a ballot comment and should have been done as a SC2 document because it addresses synchronization between ISO/IEC 10646 and Unicode which should be addressed at the SC2 level.

T5. Page 102, Row 1F30: Miscellaneous Symbols and Pictographs, 1F3B1 BILLIARDS

Ireland objects strenuously to the proposed glyph change for 1F3B1 BILLIARDS. The source for this character in both SoftBank and KDDI is, properly ビリヤード, biriyādo, that is ‘billiards’. The reference glyphs for both of those is a green game table with coloured balls, with a cue in the SoftBank glyph. It has always been supposed that this character could be used for pocketed or pocketless billiards, snooker, pool, carom, and other cue games. No indication of the “eight ball” is given in the Japanese sources or the original reference glyph, and indeed, numbered balls are not used in many cue sports, like snooker and carom.

e-80E	 U+1F49B proposed	BILLIARDS	[ビリヤード]	#470 ビリヤード 「biriyaado」 U+EADD SJIS-F3B1 JIS-7A33	#159 #old391 ビリヤード 「biriyaado」 U+E42C SJIS-FB6C	U+FE80E
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We understand that some (but not all) vendors have represented this character with an eightball, and we believe that this is not because this is the most representative glyph for “billiards” but because of the “Magic 8 Ball” oracle toy, popular especially in the United States, where it seems to have been introduced in 1950, though a “magic ball” was used in a 1940 Three Stooges short called “You Nazty Spy”.

Ireland requests that the original glyph  for BILLIARDS be retained unchanged, and requests the addition of a new character,  EIGHT BALL, at a suitable place in the Supplemental Symbols and Pictographs block. We believe that vendor replacement of the original reference glyph constitutes a distortion of the intended meaning of the character, and is therefore an error. Any precedent agreeing that vendors may alter the meaning of symbols, would be a very bad precedent, and we do not believe this should be encouraged.



WG2 discussion

See also comment T8 from UK.

Reversing the glyph to the original one seems advisable, with possibly a note for the alternate design. Whether or not this needs to be dis-unified is open for debate.

T6. Page 119, Row 1F68: Transport and Map Symbols, 1F6F7 SLED

Ireland suggests that the name for 1F6F7 SLED be changed to SLEDGE, which is the European English term for the item this character represents. An informative note can refer to “sled”.

Propose non acceptance

See also comment T10 from UK.

Sled seems to be a much more common term for the object depicted. Sledge and/or sleight seems to refer more often to larger object like an open-air carriage pulled by horses using runners instead of wheels for use in winter on snow/ice. As suggested by UK, the annotation can be added to say ‘= sled, toboggan’.

T7. Page 125, Row 1F90: Supplemental Symbols and Pictographs, 1F961 TAKEOUT BOX

Ireland suggests that the name for 1F961 [TAKEOUT BOX] be changed to OYSTER PAIL, with an informative note as shown below. The term “oyster pail” is the original name for the item, and avoids the problem of widely differing international terminology for the container. We do not insist that the parenthesized comments be retained in the informative note. Failing this solution, we request that British terminology be used (as is usual in the UCS), namely the term TAKE-AWAY BOX.



1F961 OYSTER PAIL

= carry-out box (Scotland, USA)

= take-away box (Australia, Hong Kong, Ireland, New Zealand, South Africa, UK),

= take-away parcel (India, Pakistan)

= take-out box (North America, Philippines)”

Proposed non acceptance

While Oyster Pail is the original name, it is now totally eclipsed in usage by the proposed name: TAKEOUT BOX, and having the original name as annotation (as currently done) should be sufficient. Furthermore, the original name is obscure to most current users of the symbol. Concerning terminology, the name list tends to use British spelling, but using British terminology is not a requirement. And we should not make the annotation an encyclopedia for world usage. However, it is possible to modify the current annotation to read:

= oyster pail, take-away box.

T8. Page 125, Row 1F90: Supplemental Symbols and Pictographs, 1F96B CANNED FOOD


Ireland suggests that the name for 1F96B CANNED FOOD be changed to TIN CAN, with an informative note. The character could be used for any similar container, regardless of the contents. The glyph need not display any particular content (since it could be beans, soup, fruit, or even motor oil).



1F96B TIN CAN

= canned food, tinned food

Proposed non acceptance

Note that the current proposed glyph is different: . It conveys the concept of canned food by showing the picture of a fruit/vegetable on the container. Making a generic tin container did not seem to be the intent of the original submitter. Note that the comment E23 from Ireland asks for the glyph change shown above.

T9. Page 125, Row 1F90: Supplemental Symbols and Pictographs, 1F995 SAUROPAUD and 1F996 T-REX

Ireland objects strenuously to the encoding of 1F995 SAUROPOD and 1F996 T-REX as presented in the PDAM. In the first place, the name SAUROPOD refers to a clade of the suborder of Sauropodomorpha of the order Saurischia, which includes Apatosaurus, Brachiosaurus, Brontosaurus, Diplodocus, and many other species. Such an umbrella is perfectly reasonable, and the UCS has done that even for OCTOPUS (referring to some 300 species). “T-REX” on the other hand refers to a particular species, which is too precise. Moreover, as an abbreviation, the hyphen is never used in scientific names (the correct form would be *T. rex*) and in the context of a UCS name TYRANNOSAURUS REX would be the correct term (however it might be presented to an end user in a format like :t-rex: or whatever). A slang abbreviation is not a suitable name for formal standardization. It is, of course, suitable for an informative note (and we have included this in our proposal below).

Beyond this, however, is the fact that a group like Sauropod and an individual species like *Tyrannosaurus rex* do not form anything like a coherent group that epitomizes “dinosaur”. Many millions of people admire dinosaurs, and it’s quite common to find that people have had one or more favourite dinosaurs from childhood. “Where’s my Ticeratops?” “Why isn’t there an Iguanodon?” will surely be some of the first reactions to the standardization of only two pictographs in this block. On the other hand, a properly complete set will certainly be very popular indeed.

Evidently some very basic proposals had been made to encode some “dinosaurs” as emoji, but singling out two simply makes no sense. The UCS includes many mammal symbols, and work seems to be ongoing to identify a larger and larger set of them, based on evident familiarity, metaphor, and desirability indicating some expected use. We understand that many successful emoji proposals, at least in part, have not been based on systematic analysis or even on internet discussions about missing emoji, but rather on Instagram and Google Trends data based on word frequency. This does not seem to be an entirely sufficient criterion, particularly as emoji are often used metaphorically, and outside of metaphor words may be used for all sorts of ordinary reasons. It may be useful to note that the word “cricket” is probably far, far more commonly used on the internet for the sport than for the insect. Do many people use the word “Sauropod” in speech? Quite likely they do not, but the class of “dinosaurs” is comprised of a number of familiar groups, and, in our view, a relatively small number of encoded pictographs would suffice to represent that group.

The set of existing UCS emoji symbols for the kingdom Animalia is not very well balanced. This is nobody’s fault. The set began with animals implemented in late-90s Japanese telecom sets. As mentioned above, this was augmented by German and Irish National Body comments adding more animals for, for example, a complete set of characters used in the Asian Zodiac. (That is why there is a crocodile encoded, for instance.) Since then some more animals have been added. The current UCS (including the content of this PDAM) has, in the emoji classification:

- 1 amphibian
- 13 birds
- 11 “bugs” (9 arthropods, 1 mollusc, and 1 architectural device made out of a proteinaceous extrusion)
- 48 mammals (47 mammals and 1 pair of paw prints)
- 12 “marine” creatures (including 4 fish, 3 mammals, 2 arthropods, 2 molluscs, and a mollusc shell)
- 6 reptiles (including 2 dragons).

Where the two dinosaur characters would be classified is uncertain. Perhaps the sauropod would be classed as a reptile, and the tyrannosaur as a bird (both go back to a subgroup Tyrannoraptora).

Levity aside, there are, according to Mammal Species of the World, 5,416 species of mammals identified in 2006. These were grouped into 1,229 genera, 153 families and 29 orders. While it is likely that more mammal pictographs could be added to the UCS, 45 isn’t a bad start. It’s unlikely that symbols for 1200 genera would be needed. For dinosaurs, however, the number of genera is much smaller (about 500) and there too, it is unlikely that a great many symbols would be needed. But given their popularity, Ireland believes that certainly more than two is necessary.

Described as dragons in the Western Jin Dynasty, dinosaurs have fascinated our culture for a very long time. Modern study of dinosaur has done so no less, and popular culture is permeated by them: noteworthy are Jules Verne’s 1864 Journey to the Centre of the Earth (Ichthyosaurs, Plesiosaurs; Dimetrodon was in the 1959 film of this book); Arthur Conan Doyle’s 1912 The Lost World (Ichthyosaurs, Iguanodon, Plesiosaurs, Pterosaurs, Sauropods, Stegosaurians, some carnivorous Therapods); the 1933 film King Kong (Ceratopsians, Plesiosaurs, Pterosaurs, Sauropods, Stegosaurians, Tyrannosaurids); many others, until more modern scientific findings about dinosaurs found their way into Michael Crichton’s 1990 novel Jurassic Park and the films that were based on it. Some non-dinosaur characters also have high visibility in popular culture. Two of these, the MAMMOTH and DODO, are commonly used in ordinary phrases: “a mammoth sale”, “as dead as a dodo”.

The character names given below are chosen from the standard scientific taxonomy, and so the most identifiable species in each class of dinosaur are reflected with accurate nomenclature. Thus there are some genera, families, superfamilies, suborders, orders, and clades represented.

Because the characters proposed here represent the most iconic and popularly identifiable dinosaurs, we would not expect further requests to encode additional ones. Ireland believes that a set of 18 symbols representing dinosaurs and some other prehistoric creatures would do well to fill in the gaps implied by SAUROPOD and T-REX. We believe that encoding only those 2 characters at this time would simply lead to calls to fill the gaps, and we think that we have done that here. A species-based nomenclature would be possible but

less advantageous. If TRICERATOPS were encoded, the glyph should really not be of a Protoceratops or Styracosaurus. CERATOPSIAN gives glyph designers more choice.




Dinosaurs and other prehistoric reptiles¹

	1F9A0	ANKYLOSAUR	<ul style="list-style-type: none"> • a suborder of the order Ornithischia
	1F9A1	ARCHAEOPTERYX	<ul style="list-style-type: none"> • a genus of the suborder Theropoda of the order Saurischia
	1F9A2	CERATOPSIAN	<ul style="list-style-type: none"> • a suborder of the order Ornithischia • includes Protoceratops, Styracosaurus, Triceratops
	1F9A3	DROMAEOSAURID	<ul style="list-style-type: none"> • a family of the suborder Theropoda of the order Saurischia • includes Deinonychus, Utahraptor, Velociraptor
	1F9A4	HARDROSAURID	<ul style="list-style-type: none"> • a family of the suborder Ornithopoda of the order Ornithischia • includes Edmontosaurus, Hadrosaurus, Parasaurolophus
	1F9A5	ICHTHYOSAUR	<ul style="list-style-type: none"> • a member of the order Ichthyosauria
	1F9A6	IGUANODON	<ul style="list-style-type: none"> • a genus of the suborder Ornithopoda of the order Ornithischia
	1F9A7	ORNITHOMIMID	<ul style="list-style-type: none"> • a family of the suborder Theropoda of the order Saurischia • includes Gallimimus, Ornithomimus, Struthiomimus
	1F9A8	PACHYCEPHALOSAUR	<ul style="list-style-type: none"> • a family of the suborder Pachycephalosauria of the order Ornithischia • includes Pachycephalosaur, Stegoceras
	1F9A9	PLESIOSAUR	<ul style="list-style-type: none"> • a member of the order Plesiosauria • includes Elasmosaurus, Liopleurodon, Plesiosaurus • represents Nessie, the Loch Ness Monster
	1F9AA	PTEROSAUR	<ul style="list-style-type: none"> • a member of the order Pterosauria • includes Pteranodon, Pterodactylus, Quetzalcoatlus
	1F9AB	SAUROPOD	<ul style="list-style-type: none"> • a clade of the suborder of Sauropodomorpha of the order Saurischia • includes Apatosaurus, Brachiosaurus, Brontosaurus, Diplodocus
	1F9AC	SPHENACODONTID	<ul style="list-style-type: none"> • a genus of the family Sphenacodontidae • includes Ctenospondylus, Dimetrodon, Secodontosaurus, Sphenacodon
	1F9AD	STEGOSAURIAN	<ul style="list-style-type: none"> • a suborder of the order Ornithischia • includes Huayangosaurus, Kentrosaurus, Stegosaurus
	1F9AE	TYRANNOSAURID	<ul style="list-style-type: none"> • a superfamily of the suborder of Theropoda of the order Saurischia • includes Albertosaurus, Gorgosaurus, Tyrannosaurus (T. rex)

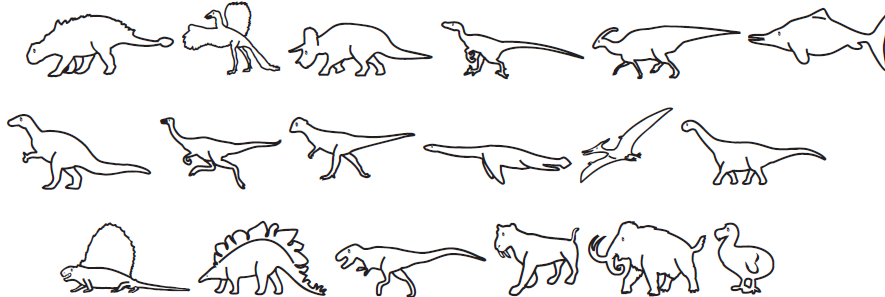
¹ Dinosaurs are animals which belong to the orders Ornithischia and Saurischia. Ichthyosaurs, Plesiosaurs, and Sphenacodontids are not taxonomically classified as dinosaurs, and in places

the term “dinosaurs” has been used loosely here to refer to dinosaurs and other prehistoric reptiles, as indicated by the informative header to the names list.

Extinct creatures

- | | | |
|---|-------|------------------------|
|  | 1F9AF | SABRE-TOOTHED CAT |
| | | = Smilodon |
|  | 1F9B0 | MAMMOTH |
| | | • indicates great size |
|  | 1F9B1 | DODO |
| | | • indicates extinction |

Examples of the glyphs at a larger size



WG2 discussion

See comments T12 and T14 from UK.

The editor would also like to object strenuously ☺ (to use Irish NB terms in this comment) to seeing such a long argument presented in a ballot comment instead of a separate contribution.

Clearly the two proposed symbols differ in their scope, one: 1F995 SAUROPOD representing a generic ‘dinosaur’ as perceived by many persons, the other 1FF9 T-REX representing a specific popular animal of the same era. There is no requirement at having a proposal to be comprehensive and the UCS encoding model is additive. While a fuller representation of animal symbols in the UCS is possible, such a proposal should be made in a separate document.

However, the term ‘TYRANNOSAURUS REX’ seems preferable and as suggested by Ireland, the current name: T-REX could be added in annotation (de facto inverting the current name and annotation for 1F996).

T10. Page 125, Row 1F90: Supplemental Symbols and Pictographs, 1F9E2 BILLED CAP

Ireland suggests that the name for 1F9E2 BILLED CAP be changed to BASEBALL CAP. The term “billed cap” is known, but in all varieties of English the term “baseball cap” is the most commonly used.

WG2 discussion

The terms ‘BILLED CAP’ seem to indicate a more generic symbol in as the bill can be elongated.

Editorial comments:

E1. Page 89, Row 1F10: Enclosed Alphanumeric Supplement, 1F12F COPYLEFT SIGN

Ireland requests that the informative cross-reference for 1F12F COPYLEFT SIGN be changed from 2184 to 2183, since the letterform in the glyph for 1F12F is a capital and not a small letter.

Propose acceptance

E2. Page 97, Row 1F30: Miscellaneous Symbols and Pictographs, 1F301 FOGGY

Ireland agrees with the changes proposed for 1F301 FOGGY, though the glyph needs clean-up.





Propose acceptance

Based on receiving a font with the appropriate glyph.

E3. Page 97, Row 1F30: Miscellaneous Symbols and Pictographs, 1F3B5 MUSICAL NOTE and 1F3B6 MULTIPLE MUSICAL NOTES

Ireland requests discussion as to whether the glyphs for the existing characters 1F3B5 MUSICAL NOTE and 1F3B6 MULTIPLE MUSICAL NOTES be altered to conform to most vendor practice (two notes barred, three notes high-low-high). It should be noted that 1F39C BEAMED ASCENDING MUSICAL NOTES and 1F39D BEAMED DESCENDING MUSICAL NOTES, which are not used as emoji, are related to 1F3B5. Also note that in the source Japanese character sets, 1F3B5 is a single eighth-note or quaver. This may be an issue for vendors.





e-813	 U+1F4A0 proposed	MUSICAL NOTE = music, being in good mood (x (eighth note - 266A) Temporary Notes: Disunified from U+266A due to source separation rule (Shift_JIS).	#146 "Cheerful" んるん 「runrun」 U+E6F6 SJIS-F99B JIS-7870	#343 八分音符 U+E58E SJIS-F7EE JIS-7870	#46 #old62 音符 U+E03E SJIS-F97E	U+FE813
e-814	 U+1F4A1	MULTIPLE MUSICAL NOTES = dancing notes, mood, melody Temporary Notes: disunified from 𠂔	#155 "Mood" ムード 「muudo」	#291 メロディ 「merodei」	#47 #old308 音符(楽しい) 「音符(素sui)」	U+FE814

Propose noted

Not sure what should be the outcome. It is true that the glyphs for 1B3B5 and 1B3B6 vary a lot among implementation, examples in the editor context:

Segoe UI (Windows 10 font):  

Source Emoji (used for the code chart for other characters)  

Making the glyph for 1F3B6 two notes barred would make it very (too?) like U+266B 𠂔 BEAMED EIGHTH NOTE.

E4. Page 97, Row 1F30: Miscellaneous Symbols and Pictographs, 1F308 RAINBOW

Ireland recommends that the glyph for the existing character 1F308 RAINBOW be cut in half, as most vendors do not display the entire arc in the glyph for this character.



Propose acceptance

Based on receiving a font with the appropriate glyph.

E5. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F409 DRAGON and 1F432 DRAGON FACE

The new proposed glyphs for the existing characters 1F409 DRAGON and 1F432 DRAGON FACE do not look remarkably more Asian, nor very much more like many of the vendor images. Perhaps further study on an appropriate glyph should be done. In any case we do not think that there is a rationale for the yin-yang symbol to be retained on the first of these. We recommend that the dragon's body be white, for conformity with most of the other animal glyphs in a black-and-white font, and that the yin-yang symbol be removed.



Propose acceptance

Based on receiving a font with the appropriate glyph. Noted that no glyph change for 1F432 🐉 DRAGON FACE is proposed.

E6. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F40B WHALE

Ireland recommends that the new glyph for the existing character 1F40B WHALE be given as white, to conform to the practice for the other animal symbols in the code charts.



Propose acceptance

Based on receiving a font with the appropriate glyph.

E7. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F450 OPEN HANDS SIGN

Ireland recommends that the glyph for the existing character 1F450 OPEN HANDS SIGN use the base glyph of 270B RAISED HAND for consistency amongst the black and white glyphs in the standard.



Propose acceptance

Based on receiving a font with the appropriate glyph.

E8. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F478 GHOST

Ireland notes that the glyph for the existing character 1F478 GHOST has been changed from the original reference glyph, but the new one does not have arms and does not otherwise look like most vendors' ghosts. We recommend the following compromise:



Propose acceptance

Based on receiving a font with the appropriate glyph.

E9. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F4A9 PILE OF POO

Ireland believes that the proposed glyph for the existing character 1F4A9 PILE OF POO is not really acceptable; the black fill makes it unrecognizable. We propose a white glyph one based on a more common glyph.



Propose acceptance

Based on receiving a font with the appropriate glyph.

E10. Page 98, Row 1F30: Miscellaneous Symbols and Pictographs, 1F4AA FLEXED BICEPS

Ireland believes that the glyph for the existing character 1F4AA FLEXED BICEPS does not need a movement mark.



Propose acceptance

Based on receiving a font with the appropriate glyph.

E11. Page 99, Row 1F30: Miscellaneous Symbols and Pictographs, 1F536 LARGE ORANGE DIAMOND, 1F537 LARGE BLUE DIAMOND, 1F538 SMALL ORANGE DIAMOND, 1F539 SMALL BLUE DIAMOND

Ireland does not agree with the proposed glyph changes for the existing characters 1F536 LARGE ORANGE DIAMOND, 1F537 LARGE BLUE DIAMOND, 1F538 SMALL ORANGE DIAMOND, 1F539 SMALL BLUE DIAMOND. In the heraldic system of hatching used for the black and white code chart fonts for the UCS, blue is hatched with horizontal lines, and orange is hatched with horizontal lines crossing top right to bottom left lines. (There are several hatching systems, but this is the one which has previously used in the UCS. Orange and blue are also found in 1F4D8 BLUE BOOK and 1F4D9 ORANGE BOOK. The proposed new glyphs are also taller than they are wide (which is not a feature found in the vendors' glyphs). We think an error has been made, and no change of glyph is needed for these—at least, the patterns proposed are not the right ones. The spacing of the hatching could be re-visited, but the hatching itself is accurate.



















































































Propose acceptance

There seem to be no reason to change the hatching systems for these glyphs, as such the request from Ireland seems reasonable.

E12. Page 114, Row 1F60: Emoticons

Of the 80 characters in this block, the ballot proposes glyph changes to 9% of them, maintaining that vendors' colour emoji glyphs for these differ from the chart glyphs. While this is accurate, we Ireland has found in our review of the glyphs—with attention to eye-shape, position of water droplets, and other features—that in fact 57.5% of the glyphs differ significantly enough from current implementations that they too need to be revised. This is not surprising; when the code chart fonts were designed, much attention was given to the small colour bitmaps of the Japanese sources. Ireland recommends that the glyphs in the code table at the end of this document be used (changed glyphs are in yellow).

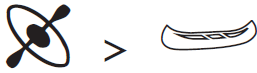
(Ed. code table inserted next page)

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1	 1F601	 1F611	 1F621	 1F631	 1F641
2	 1F602	 1F612	 1F622	 1F632	 1F642
3	 1F603	 1F613	 1F623	 1F633	 1F643
4	 1F604	 1F614	 1F624	 1F634	 1F644
5	 1F605	 1F615	 1F625	 1F635	 1F645
6	 1F606	 1F616	 1F626	 1F636	 1F646
7	 1F607	 1F617	 1F627	 1F637	 1F647
8	 1F608	 1F618	 1F628	 1F638	 1F648
9	 1F609	 1F619	 1F629	 1F639	 1F649
A	 1F60A	 1F61A	 1F62A	 1F63A	 1F64A
B	 1F60B	 1F61B	 1F62B	 1F63B	 1F64B
C	 1F60C	 1F61C	 1F62C	 1F63C	 1F64C
D	 1F60D	 1F61D	 1F62D	 1F63D	 1F64D
E	 1F60E	 1F61E	 1F62E	 1F63E	 1F64E
F	 1F60F	 1F61F	 1F62F	 1F63F	 1F64F

WG2 discussion
This needs review.

E13. Page 117, Row 1F68: Transport and Map Symbols, 1F6F6 CANOE

Ireland believes the glyph for the existing character 1F6F6 CANOE should look a lot more like a canoe.

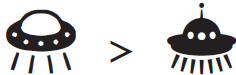


WG2 discussion

The request from Ireland seems reasonable, assuming the glyph is provided. Other versions also show the paddle as in ☞.

E14. Page 117, Row 1F68: Transport and Map Symbols, 1F6F8 FLYING SAUCER

Ireland recommends an altered glyph for 1F6F8 FLYING SAUCER that looks a bit more like a space-craft. The current glyph looks rather like an LED light.













Propose acceptance

The request from Ireland seems reasonable, assuming the glyph is provided.

E15. Page 123, Row 1F90: Supplemental Symbols and Pictographs, new Emoticons

Ireland has reviewed a number of the emoticons on this page, and recommends glyph alterations for the following existing characters in line with vendor practice in colour emoji fonts:

(Ed. existing glyphs added in comment)

1F912		FACE WITH THERMOMETER
1F914		THINKING FACE
1F915		FACE WITH HEAD-BANDAGE
1F917		HUGGING FACE
1F920		FACE WITH COWBOY HAT
1F921		CLOWN FACE
1F922		NAUSEATED FACE
1F923		ROLLING ON THE FLOOR LAUGHING
1F924		DROOLING FACE
1F926		FACE PALM

(Ed. Proposed new glyphs)



WG2 discussion

Some changes are nearly invisible (U+1F915, U+1F920, U+1F921, U+1F922). Some are significant U+1F923 and U+1F926.

E18. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F932 PALMS UP

Ireland recommends that the glyph for 1F932 PALMS UP TOGETHER should use the base glyph of 2708 for consistency amongst the black and white glyphs in the standard.



WG2 discussion

The consistency argument makes sense. However in the PALMS UP original glyph, the thumb is closer to the other fingers.

E19. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F933..1F937 glyphs

Ireland notes that the glyphs for 1F933 SELFIE, 1F934 PRINCE, 1F935 MAN IN TUXEDO, 1F936 MOTHER CHRISTMAS, and 1F937 SHRUG are incorrectly shown in the PDAM. The following glyphs should be used:



WG2 discussion

The rendering issue with the range U+1F933..1F937 was a production error. There is another set shown in the Unicode 10.0 beta which shows the following glyphs (using a different font for these characters):



At this point, it is not 100% clear which ones should be the preferred glyphs. The original glyphs (as shown in the Irish comment) are probably preferable.

E20. Page 123, Row 1F90: Supplemental Symbols and Pictographs, hands design







Ireland recommends that the glyphs for 1F938 PERSON DOING CARTWHEEL, 1F939 JUGGLING, 1F93A FENCER, 1F93B MODERN PENTATHALON, 1F93C WRESTLERS, 1F93D WATER POLO, 1F93E HANDBALL, 1F9D8 PERSON IN LOTUS POSITION, 1F9DA FAIRY, 1F9DC MERPERSON, and 1F9DE GENIE should not have their hands floating from their arms, for consistency amongst the black and white isotype glyphs in the standard. The following glyphs have been cleaned up to conform to the design of related glyphs in the standard.:



WG2 discussion

Original glyphs shown below:

1F938		PERSON DOING CARTWHEEL
1F939		JUGGLING
1F93A		FENCER
1F93B		MODERN PENTATHALON
1F93C		WRESTLERS

1F93D		WATER POLO
1F93E		HANDBALL
1F9D8		PERSON IN LOTUS POSITION
1F9DA		FAIRY
1F9DC		MERPERSON
1F9DE		GENIE

The list contains existing and newly proposed characters. Some of the character orientations are also modified.

E21. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F95C PEANUTS

Ireland recommends that the glyph for the existing character 1F95C PEANUTS should have two nuts in it, as the name is plural, and to help distinguish the glyph from that of 1F954 POTATO (especially in small sizes in coloured fonts). Anecdotally we have seen this character used on Twitter with a distinctly plural meaning.

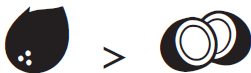


Propose acceptance

The Irish NB argument makes sense, assuming the glyph is provided.

E22. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F965 COCONUTS

Ireland recommends that the glyph for 1F965 COCONUT should be more recognizable.

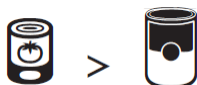


Propose acceptance

The Irish NB argument makes sense, assuming the glyph is provided.

E23. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F96B CANNED FOOD

Ireland recommends that the glyph for 1F96B [CANNED FOOD] be less specific as to its contents. See comment T8 above.



Propose non acceptance

In T8. Ireland is requesting a name change for 1F96B to TIN CAN. If that name change was accepted, then this glyph change would make sense.

E24. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F985 EAGLE, 1F986 DUCK, 1F987 BAT

Ireland recommends that the glyphs for the existing characters 1F985 EAGLE, 1F985 DUCK, and 1F985 BAT should follow the majority of vendor glyphs, which are of realistic animals. Here, the first glyph is to be a bald eagle; the second should not look like a rubber toy, and the last should not look like the emblem of a super-hero.

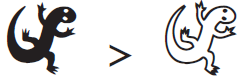


Propose acceptance

The Irish NB argument makes sense, assuming glyphs are provided.

E25. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F98E LIZARD

Ireland recommends that the glyph for the existing character 1F98E LIZARD be given as white, to conform to the practice for the other animal symbols in the code charts.



Propose acceptance

The Irish NB argument makes sense, assuming a glyph is provided. Should not the glyph be mirrored to face leftwards?

E26. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F932 RHINOCEROS

Ireland recommends that the glyph for the existing character 1F932 RHINOCEROS should use the base glyph of a full rhinoceros' body, as two of the existing vendors' glyphs do. We note that GIRAFFE FACE and ZEBRA FACE are on the current ballot. If a RHINOCEROS FACE is required, one should be added. Vendors should make a reasonable distinction between full-body animals and faces, to ensure character identity. A review of current practice should be undertaken and additional characters be added if necessary.

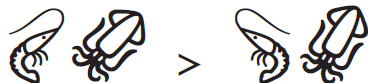


WG2 discussion

The Irish NB argument makes sense. However, there are many more of these, such as 1F98C DEER, 1F98D GORILLA. It is interesting to note that when an animal name includes 'FACE' all vendors show the face which is expected. When the name is generic, vendors sometimes show the face, sometimes the whole body. Instead of encoding a new character, it may make sense in general to use a whole body for the representative glyph and possibly add an annotation saying that the glyph may also just be a face for the cases when there are known vendor variations.

E27. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F990 SHRIMP, 1F991 SQUID

Ireland recommends that the glyphs for the existing characters 1F990 SHRIMP and 1F991 SQUID should be rotated in line with current vendor practice.












Propose acceptance

The Irish NB argument makes sense, assuming glyphs are provided.

E28. Page 123, Row 1F90: Supplemental Symbols and Pictographs, new people

Ireland recommends that the glyphs for the new people, namely the characters 1F9D1 ADULT, 1F9D2 CHILD, 1F9D3 OLDER ADULT, 1F9D4 BEARDED PERSON, 1F9D5 PERSON WITH HEADSCARF, 1F9D9 MAGE, 1F9DB VAMPIRE, and 1F9DD ELF have the same eyes and nose design as 1F468 MAN for consistency amongst the black and white glyphs in the standard. We recommend that the beard on 1F9D4 be made to stand out a little bit more by increasing visible skin area.

(showing all referenced characters in following table)

1F468		MAN
1F9D1		ADULT
1F9D2		CHILD
1F9D3		OLDER ADULT
1F9D4		BEARDED PERSON
1F9D5		PERSON WITH HEADSCARF
1F9D9		MAGE
1F9DB		VAMPIRE
1F9DD		ELF

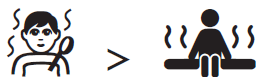
Propose acceptance in principle

Currently, the Pictographic blocks use various fonts to display people. It may be simpler to modify the MAN glyph to be consistent with the newly proposed characters. The font used for the new characters has U+1F468 MAN as



E29. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F9D6 PERSON IN STEAMY ROOM

Ireland recommends that the glyph for 1F9D6 PERSON IN STEAMY ROOM use an isotype glyph. The object held by the person in the proposed glyph on the PDAM could either easily be either a sauna ladle or a cooking spoon.

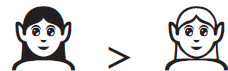


Propose acceptance

The Irish NB argument makes sense, assuming a glyph is provided.

E30. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F9DD ELF

Ireland was intending to recommend that the glyph for 1F9DD ELF, which was originally proposed as a Middle-earth-style elf, should be drawn with blond hair.



We recognize, however, that this character is different than the other mythical creatures proposed. While emoji representation is a matter for the UTC, it is not difficult to predict that users will wish to use this character alongside 1F596.



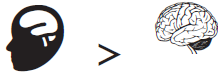
The Fitzpatrick emoji modifiers are likely to be required, since users of these symbols may wish to represent Vulcans with a range of appearance from Spock to Tuvok. For this reason we do not propose to change the hair colour of the reference glyph, believing it would be best to leave hair colour and species representation to vendors. Whether they will wish to take advantage of this opportunity will remain to be seen.



Propose noted

E31. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F9E0 BRAIN

Ireland recommends that the glyph for 1F9E0 should be a brain on its own rather than shown within a skull.

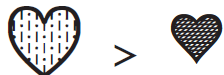


Propose acceptance

The Irish NB argument makes sense, assuming a glyph is provided.

E32. Page 123, Row 1F90: Supplemental Symbols and Pictographs, 1F9E1 ORANGE HEART

Ireland recommends that the glyph for 1F9E1 ORANGE HEART should use the normal hatching for orange. We note that the reference glyph in the PDAM is larger than the other hearts, and think the sizes should be harmonized.



Propose acceptance

The Irish NB argument makes sense, assuming a glyph is provided.

Japan: Negative

Japan NB Changes its voting to approval if TE.1 and TE.2 are accepted

General comment:

GE1. Page 1 Editor's note, Repertoire addition

As noted in "Editor's note", some repertoires without the agreement by SC2 have been added by the project editor.

We know this comes from the decision by the project editor in order to meet the need for standardization in timely manner without waiting SC2 meeting once a year. However, it is inconsistent and unfair that some repertoires have been added with the agreement and some repertoires have been added without any discussion at SC2 meeting. As for small Kana added in PDAM without SC2 agreement, even the proposal to encode has not been submitted to SC2 and WG2 document registry.

However we understand that SC2 should have some solution to register urgently needed repertoire without waiting SC2 and WG2 face-to-face meeting once a year.

Proposed change by Japan

We request to discuss this issue at next SC2 plenary. The current proposal from Japan NB is

- Basically, only repertoire with the agreement by SC2 could be added in CD or PDAM.
- As for the repertoire urgently needed, we discuss by using a conferencing or a discussion list, after submitting a justification document to urgently needed and its encoding proposal.

Propose noted

As noted by Japan, meeting only once a year creates challenge. Through past WG2 resolution M58.24 (Helsinki 2011), M59.17, M60.17, M61.13, M62.14, Recommendations M63.14, M64.08, and M65.11, the editor has gained the latitude to add content in committee level draft (PDAM and CD) without waiting for a formal endorsement from SC2 and/or SC2/WG2. It is important to note that moving out that committee level requires the establishment of a rough consensus as determined by the SC2 secretariat and the project Editor following a ballot. Such a consensus is required before issuing the next level of ballot (DAM or DIS).

Typically, additions were done in new amendments initiated after a WG2 meeting, not an existing amendment. Meeting 63 created a different opportunity because the current amendment 1 was going through another PDAM ballot (PDAM 1.2). Thus, it seemed unnecessary to wait for another amendment 2 (such as PDAM2) to insert such repertoires.

What is requested by Japan would remove that possibility except for so called 'urgently needed repertoire' and would slow down considerably any progress. Not helping is the fact that a vast minority of WG2 experts have no access to the official WG2 or even less SC2 ISO Global Directory due to their internal National Body policies, therefore they cannot contribute effectively to the progress beyond ballot comments.

To take the specific case of Small Kana, it should be noted that two of these characters (KATAKANA LETTER SMALL KO and KATAKANA LETTER SMALL KO) have been approved by Unicode since 2011 and have languished since. At the same time, the editor could have done a better job at documenting the additions by using the WG2 registry, instead of just relying on the Unicode registry.

As for using teleconferencing and discussion list for urgently needed repertoire, the best approach may be for interested parties to participate remotely or in person to the UTC meetings taking place every 3 months where all these repertoire additions are discussed.

In addition, the editor can commit to discuss all these additions in both WG2 discussion lists prior to their addition into an amendment. It is clear that such a move would have avoided some of the issues perceived in this PDAM 1.2 ballot.

Technical comments:

TE.1. Page 77 Historic Hiragana 1B001

The sub-header name "Historic Hiragana" is not appropriate for U+1B001 HENTAIGANA LETTER E-1, because U+1B001 is one of HENTAIGANA script as represented by its character name alias.

Proposed change by Japan

The sub-header name should be changed to "Hentaigana and Historic Hiragana."

Propose acceptance in principle

In Unicode, the corresponding page at <http://www.unicode.org/charts/PDF/Unicode-10.0/U100-1B000.pdf> uses the terms 'Hentaigana and Historic Hiragana'. It could either be revised to be identical to the Japanese request. Another alternative may be to simply use Hentaigana sub-header starting at 1B001. After all, the character encoded at U+1B001 was all along inherently part of the Hentaigana set, even if its prior encoding made its name using a different naming scheme.

TE.2. Page 82 Kana Extended-A 1B127-1B12F

Japan NB disagrees to encode these 9 small Kana characters at this moment with the following reason.

- As shown in the contribution that will be submitted by the Japanese expert shortly after, we found the evidence of usage for more small Kana characters. And furthermore more small Kana characters would be found through the further investigation.
- We have no information about the selection criteria of these 9 small Kana characters. Even the proposal to encode these small Kana character is not found in SC2 and WG2 document registry.
- The encoding mechanism should be considered depending on the whole repertoire of small Kana characters. For example, it may be appropriate to encode small Kana characters corresponding to all Kana characters except the ones already encoded, or to encode some kind of modifier to be associated with any Kana characters.

Proposed change by Japan

Delete 9 small Kana characters on this PDAM. Recommend to discuss small Kana characters at the next WG2 meeting.

Propose acceptance

These characters were discussed in <http://www.unicode.org/L2/L2016/16334-kana-small.pdf> , <http://www.unicode.org/L2/L2016/16354-kana-small-ltr.pdf> , and <http://www.unicode.org/L2/L2016/16358r-small-kana-fdbk.pdf> . The third document presents evidence for seven of these proposed characters. The two other characters (SMALL KO) have been approved by Unicode since 2011. The editor recognizes he should have encouraged the submitters to create a document with all nine characters that could be posted in the WG2 registry.

If the amendment stays in PDAM phase, there is no benefit in removing these 9 characters in the amendment, but given that adding these characters during the next WG2 meeting would likely get to the same result, the editor is willing to remove them from the current amendment text.

Mongolia: Positive with comments

(some comments mentioned as general or editorial were reclassified as technical)

Technical comments:

T1. Page 57-59 Zanabazar Square

Zanabazar's square initial double lined head mark, closing double lined head mark and Zanabazar square sub joiner should include in the encode table and chart.

Proposed change by Mongolia

No change.

Propose noted

This appears to be an endorsement of their encoding in the standard.

T2. Page 57 Zanabazar Square

The character names, transliterations and encoding order of particular Square scripts (11A2D, 11A2F, page 57) are wrong.

Proposed change by Mongolia

Therefore please consider the correction of character names, transliterations and encoding order of particular Square scripts in next time. Anshuman Pandey /author of the project/should carefully study Mongolian texts and cooperate with Mongolian researchers.

Propose noted

The same comment was made as T6 by Mongolia for Amendment 1 and disposed in document WG2 N4767 as following (adhoc meeting refers to the meeting in Tokyo, 15-16 Oct 2015):

The report for that adhoc meeting L2/15-249R [WG2 N4699] indicated that:

- The ad hoc did not have consensus to recommend a change of name for the Zanabazar Square script.
- The ad hoc did not have consensus to recommend any changes related to characters □ (11A20) 𐎢 (11A2E) and 𐎣 (11A2D); there were differences of opinion on the preferred names for these characters and on whether an additional character should be added in this set.

It is not that the suggested changes by Mongolia were not considered; there just did not reach consensus. Mongolia needs to make a case for any changes in the current block. Note that any changes in names and allocation of 11A2D and 11A2F would need to be made in the context of the DIS ballot of the 5th edition of 10646 where these characters are included, not in this amendment.

The time has now passed for doing such comments because the 5th edition is now frozen and should be published very soon.

T3. Page 60-61 Soyombo

Soyombo pluta mark should be included in the encoding table.

Proposed change by Mongolia

No change.

Propose noted

This appears to be an endorsement of their encoding in the standard.

T4. Page 60-61 Soyombo

Vertical writing order of Soyombo script for writing transcript of Sanskrit tantras are used in the manuscripts should be studied with awareness. Therefore, the independent encoding of subjoined forms of each consonant letter required in the encoding table. Without those forms, the stack writing practice/in vertical writing order of Soyombo script/ under one head will be failed.



Proposed change by Mongolia

To add place for the **subjoined forms of each consonant letter of Soyombo script**.

Otherwise, we afraid that the result of the encoding project of Soyombo script will bring lack of practice. Please see attached form of Soyombo writing.

Propose noted

This appears to a near identical comment to Amendment 1 which was disposed in N4767 as following (mentioned in error as T6, should have been T7). The disposition is the same:

T6. Page 41 Soyombo, additional changes

The author of this project found no resolution how to combine a vowel syllable for vertical writing of Soyombo scripts. This issue should be studied carefully in the encoding project of Soyombo script. Another comment we have is cases of vertical writing order of Soyombo script for writing transcript of Sanskrit tantras are used in the manuscripts should be studied with awareness. Otherwise, we afraid that the result of the encoding project of Soyombo script will bring lack of practice

Noted

These observations should be moved to a new separate contribution. If new characters need to be encoded, they need to be submitted in an encoding proposal following the usual practice for this working group.

UK: Negative

Technical/Editorial comment (T or E prefix)

E1. Title

Khitan Small script should be included in the title of this amendment.

Proposed change by UK:

Change title to “AMENDMENT 1: Dogra, Gunjala Gondi, Khitan Small, Makasar, Medefaidrin, Indic Siyaq Numbers, and other characters”.

Propose acceptance

Note however that the change may not propagate to all title locations because once a project is created, its names is frozen in some occurrences.

T2. Sub-clause 24.2, Source Reference file for Tangut ideographs

Clause 24 “Source references for Tangut Ideographs” has not been updated for the new source references used for 187ED..187F1.

Proposed change by UK:

In 24.1 add the following two Tangut sources:

L2012 Lǐ Fànwén 2012 (Tangut-Chinese Dictionary, 3rd edition)

WG2N4724 WG2 N4724 (Proposal to encode five additional Tangut ideographs)

In 24.2 Table 6 add these additional kTGT_MergedSrc formats: (L2012-dddd) and (WG2N4724-d).

Propose acceptance

E3. TangutSrc.txt

Date is given as “Wed Oct 21 11:25:48 2015” which has not been changed since the previous version of the file. The date should be updated whenever the file is modified.

Proposed change by UK:

Change date to the date at which the file was last modified.

Propose acceptance

E4. TangutSrc.txt

There is no line break after the final entry.

Proposed change by UK:

Add a line break after the final entry in the file.

Accepted

This is now fixed (chart production tool issue now fixed)

T5. Sub-clause 33, Khitan Small Script

The two format controls 18CFE (KHITAN SMALL SCRIPT HORIZONTAL JOINER) and 18CFF (KHITAN SMALL SCRIPT VERTICAL JOINER) are not the same two format controls that were accepted at the Meeting on Khitan Scripts on 20-22 August 2016 at Yinchuan, China.

The participants at that meeting agreed to encode KHITAN SMALL SCRIPT SINGLE CLUSTER INITIAL and KHITAN SMALL SCRIPT DOUBLE CLUSTER INITIAL, with the behaviour described in Section 4 of WG2 N4725R (see N4736 p. 1 and N4737 p. 1). At WG2 M65 in San José these two format controls were replaced by two format controls with a completely different behaviour.

As discussed in WG2 N4775, the clustering model agreed to at the Yinchuan meeting requires a single format character at the head of each cluster, whereas the cluster model agreed to at M65 requires n-1 format controls for each cluster of n characters, with a joiner character placed between each character in a cluster.

As explained in WG2 N4775, Khitan clusters have two fixed formats, one starting with a single centred character and one starting with a pair of adjacent characters, and the relative position of each character in the cluster is determined by the position of its preceding character. Therefore, only a single format character is required to indicate what the position of the first character in the cluster is, and any further positional joiner characters placed between each successive character in the cluster are entirely redundant.

Not only does the clustering model agreed to at M65 have a very high degree of redundancy, but as about 90% of typical Khitan Small Script texts consist of clusters rather than individual characters, an average Khitan Small Script text coded using this model would result in about 40% of coded characters being format controls. Having such a high proportion of format controls severely impedes the ability of users to easily enter Khitan text. Moreover, accidentally deleting or misplacing any of the format controls in a text would cause the clusters to render incorrectly, and as the format characters would be invisible between Khitan characters it is very likely that this would happen when editing texts, i.e. copying, moving, and deleting entire clusters or parts of clusters (e.g. grammatical suffixes which commonly occur as part of a cluster), and it would be very hard for users to diagnose and repair such damage.

In contrast, the clustering model agreed to at the Yinchuan meeting would not impose such a great burden on the user, and as the format controls should be rendered visibly if not placed at the head of a sequence of at least two Khitan characters, there would be far less scope for error and confusion.

Given that the horizontal and vertical joiner characters: a) are a technically inefficient and inferior mechanism for clustering, and b) impose an unacceptable burden on users, and c) have not been endorsed by the user community; we strongly believe that they should be removed from the amendment pending further study and agreement from the user community.

The removal of these two format characters should not affect the encoding of the rest of the Khitan Small Script repertoire, as the set of characters will still be usable without clustering support at the encoding level.

Proposed change by UK:

Remove 18CFE and 18CFF.

Proposed Acceptance

See also comment T2 from China and T1 from Ireland. It is clear that the solution adopted at the meeting M65 is not consensual and therefore the two control characters should be removed.

E6. Sub-clause 33, Kana Extended-A

1B127..1B12F are headed “Historic Kana”, which is incorrect as they are not historic letters, but are used in modern Japanese for phonetic notation.

Proposed change by UK:

Change heading for 1B127..1B12F to “Phonetic extensions”..

Proposed acceptance in principle

Note that as disposition of comment TE.2 from Japan, these characters are likely to be removed from this amendment.

T7. Sub-clause 33, Enclosed Ideographic Supplement, Xiangqi game symbol

The 30 circled and negative circled CJK Unified Ideographs at 1F270..1F28D are intended for use as Xiangqi game symbols. However, this is a glyph encoding, with separate characters for each traditional, simplified, and variant ideograph that has been attested as a Xiangqi game symbol. This approach seems to be largely intended to facilitate the transcription of historical Xiangqi game records such as those shown in N4748 figs. 9–13, but is not appropriate for users who want to interchange Xiangqi game data or to discuss particular Xiangqi game pieces.

If the aim is only to allow the transcription of historical Xiangqi game records which show game pieces as circled or negative circled ideographs then there is no necessity to encode any circled or negative circled ideograph characters at all, as a more flexible and open-ended approach would be to represent such game

pieces as sequences of the appropriate CJK Unified Ideograph and either U+20DD COMBINING ENCLOSING CIRCLE or an as yet unencoded COMBINING ENCLOSING NEGATIVE CIRCLE.

In fact, as is the case with Mahjong tiles, Domino tiles, and Playing cards, the main expected use case is for representing and interchanging game data using Unicode characters, or for discussing individual game pieces or game positions. For these purposes it is appropriate to encode a set of logical Xiangqi game pieces, with one single Unicode character for each type of piece (General, Mandarin, Elephant, Horse, Chariot, Cannon, and Soldier) for each colour, as proposed in N4748. Having multiple different Unicode characters for a single logical piece would hinder the interchange and processing of Xiangqi data, and would make it difficult to search for particular pieces or sequences of game moves in an editor or on the internet.

Defining Xiangqi game pieces as circled ideographs is also very problematic, as Xiangqi game symbols are not always represented as circled ideographs. There is a long tradition of representing Xiangqi game pieces either as ideographs or as pictures (see N4748 figs. 16–17), and particularly in Western usage pictorial symbols are often used instead of ideographs. Moreover, if vendors see fit to emojiify Xiangqi game symbols they may represent them as three-dimensional coloured pieces, and possibly as pictures (cannon, etc.) rather than as ideographs, which would be incompatible with characters that are defined as circled ideographs.

The corresponding Korean game of Janggi uses cursive forms of ideographs, but in an octagon, and these cannot reasonably be unified with the circled ideographs under ballot, so it is quite possible that in the future there will be a request to encode a set of ideographs in an octagonal frame as Janggi game pieces. It would be far better to encode a closed set of logical game pieces covering both Xiangqi and Janggi, and leave the glyph design to the font — simplified ideographs, traditional ideographs, Janggi style ideographs in an octagon, or pictures depending on the target users of the font..

Proposed change by UK:

Remove the 30 circled and negative circled characters at 1F270..1F28D, and replace them with the set of 14 Xiangqi game pieces proposed in N4748. We suggest putting these characters in a new block named Xiangqi at 1FA00..1FA0F:

1FA00 XIANGQI RED GENERAL
1FA01 XIANGQI RED MANDARIN
1FA02 XIANGQI RED ELEPHANT
1FA03 XIANGQI RED HORSE
1FA04 XIANGQI RED CHARIOT
1FA05 XIANGQI RED CANNON
1FA06 XIANGQI RED SOLDIER
1FA07 XIANGQI BLACK GENERAL
1FA08 XIANGQI BLACK MANDARIN
1FA09 XIANGQI BLACK ELEPHANT
1FA0A XIANGQI BLACK HORSE
1FA0B XIANGQI BLACK CHARIOT
1FA0C XIANGQI BLACK CANNON
1FA0D XIANGQI BLACK SOLDIER

WG2 discussion

See also comment T3 from China and T2 from Ireland.

See discussion details after comment T2 from Ireland.

T8. Sub-clause 33, Miscellaneous Symbols and Pictographs, 1F3B1 BILLIARDS

The glyph for 1F3B1 BILLIARDS has been changed from a picture of a cue and frame of balls to a picture of an “eight ball” to reflect the emoji glyph commonly used by vendors. This is entirely inappropriate as an “eight ball” is only used in one variety of the family of billiard games, i.e. pool or pocket billiards, and is not representative of other games such as billiards and snooker, and so cannot be used to represent the game of

snooker, which is by far the most important member of the billiards family (with various international tournaments and the World Snooker Championship).

Moreover, the “eight ball” is not commonly used to represent a game of billiards, but is mostly used to represent the fortune-telling device known as the “Magic 8-Ball” (see https://en.wikipedia.org/wiki/Magic_8-Ball).

The BILLIARDS character was originally intended to represent the billiards family of games, but if the glyph is changed to an “eight ball” the character will no longer be appropriate for use in sporting contexts in the same way that other sports emoji are used.

The “eight ball” is clearly a very different character to the BILLIARDS character, and it is wholly wrong to unify the two characters, and even worse to hijack the BILLIARDS character to mean “magic 8-ball”.

The solution to this problem is to keep the original glyph for 1F3B1, and encode a new character with the 8-ball glyph and character name EIGHT BALL. This will enable fans of billiards, snooker and pool to continue to promote their sport on social media with an appropriately-designed emoji, and for users who wish to evoke the Magic 8-Ball on social media to do so without misappropriating the BILLIARDS emoji.

Proposed change by UK:

1. Revert the glyph change for 1F3B1.
2. Add a new character named EIGHT BALL to this amendment at an appropriate code point, with the 8-ball glyph.

WG2 discussion

See also comment T5 from Ireland.

Reversing the glyph to the original one seems advisable, with possibly a note for the alternate design. Whether or not this needs to be dis-unified is open for debate.

E9. Sub-clause 33, Miscellaneous Symbols and Pictographs, 1F4A9 PILE OF POO

The glyph for 1F4A9 PILE OF POO has been changed from a steaming pile of poo to show eyes and a friendly smile, and a note “may be depicted with a friendly face” has been added. As the glyph now already shows a friendly face that note is redundant, and it would be better to indicate that the friendly face is optional, and it may be depicted as a steaming pile of poo, as originally designed.

Proposed change by UK:

Change note for 1F4A9 to “may be depicted as a steaming pile of poo without a friendly face”.

Proposed acceptance in principle

See also comment E9 from Ireland.

The annotation is not new to this amendment, but could be amended to “may be depicted with or without a friendly face”.

E10. Sub-clause 33, Transport and Map Symbols, 1F6F7 SLED

This is more commonly known as a “sledge” in British English, and may also be referred to as a “toboggan”. It is best to add aliases for these terms.

Proposed change by UK:

Add following aliases for 1F6F7 SLED:

= sledge, toboggan.

Proposed acceptance

See also comment T6 from Ireland.

E11. Sub-clause 33, Geometric Shapes Extended, 1F7D5..1F7D8 heading

1F7D5..1F7D8 have the heading “Go stones markers”, but the plural “stones” is not right.

Proposed change by UK:

Change heading for 1F7D5..1F7D8 to “Go stone markers”.

Proposed acceptance

T12. Sub-clause 33, Supplemental Symbols and Pictographs, 1F996 T-REX

The name “T-REX” for 1F996 is not appropriate as it does not accord to conventions for names of species. The name should be given in full as TYRANNOSAURUS REX.

Proposed change by UK:

Change name of 1F996 to TYRANNOSAURUS REX.

Proposed acceptance

See also comment T9 from Ireland.

The disposition of comment T9 suggests the same name change with an annotation ‘= t-rex’.

T13. Sub-clause 33, Supplemental Symbols and Pictographs, animal symbols: GIRAFFE FACE, ZEBRA FACE, and HEDGEHOG

The addition of emoji characters representing animals to the standard is unsystematic and seems to depend upon the whimsy of the Unicode Emoji Subcommittee.

While Giraffe Face and Zebra Face complete the set of iconic and distinctive African large mammals, Hedgehog does not complete a set but is only one of several iconic and distinctive European small mammals that are not currently encoded as emoji. Badger and Squirrel are equally iconic and distinctive European small mammals. If Hedgehog is deemed suitable for encoding, then Badger and Squirrel should also be encoded as emoji in order to complete the set of icon, distinctive and well-loved small European mammals.

A 2013 BBC poll to find the national species for Britain

(<http://www.discoverwildlife.com/british-wildlife/britains-national-species-revealed>) chose Hedgehog in first place, Badger in second place, Oak tree in third place, and Red Squirrel in third place. This shows the importance of Hedgehog, Badger and Squirrel to the British public, and we request that emoji characters for all three of these animals should be encoded.

Proposed change by UK:

Add the following characters to Supplemental Symbols and Pictographs:

BADGER

SQUIRREL.

WG2 discussion

Additions need to be discussed.

T14. Sub-clause 33, Supplemental Symbols and Pictographs, Dinosaurs

T-REX and SAUROPOD.

Dinosaurs are by far the most well-known and well-loved group of extinct animals, and encoding dinosaur emoji will fill a welcome gap in the current emoji coverage. However, the two proposed characters, T-Rex and SAUROPOD, only partially fill this gap, and users will surely not be satisfied with emoji for just two of the many iconic and distinctive types of dinosaur. If it is acceptable to have 45 emoji for mammals (as of Unicode 9.0), then surely it is appropriate to encode emoji characters for all the most well-known and distinctive groups of dinosaurs and other prehistoric animals (as suggested in L2/16-103). At a minimum, we suggest that Stegosaurus, Triceratops and Velociraptor are also encoded as these three are at least as famous as Sauropod and T. rex.

If we are going to add emoji characters for dinosaurs, then we should consider adding emoji characters for other notable prehistoric and extinct animals. We therefore suggest adding characters for DODO and MAMMOTH to this amendment, as these are two notable and distinctive extinct animals. Moreover, both have strong metaphorical connotations (Dodo invokes stupidity and extinctness, whereas Mammoth invokes hugeness of size or scale), and the selection factors for emoji (<http://unicode.org/emoji/selection.html>) gives weight to emoji candidates that have "notable metaphorical references or symbolism".

Proposed change by UK:

Add the following characters to Supplemental Symbols and Pictographs:

STEGOSAURUS

TRICERATOPS

VELOCIRAPTOR

MAMMOTH

DODO

WG2 discussion

See also comment T9 from Ireland.

Additions need to be discussed. The additions proposed in comment T9 from Ireland are a much larger superset with slightly different names for the 'dinosaurs': CERATOPSIAN instead of TRICERATOPS, DROMAESAURID instead of VELOCIRAPTOR, and STEGOSAURIAN instead of STEGOSAURUS. The names from comment T9 are more generic, but the names from the UK comment are more common.

E15. Sub-clause 33, Supplemental Symbols and Pictographs, Fantasy beings

MAGE, FAIRY, VAMPIRE, MERPERSON, ELF, GENIE, ZOMBIE are listed under the heading "Portrait and role symbols", but they should be placed under a separate heading, such as "Fantasy beings".

Proposed change by UK:

Add a heading of "Fantasy beings" (or other appropriate heading) for MAGE, FAIRY, VAMPIRE, MERPERSON, ELF, GENIE, and ZOMBIE.

Proposed acceptance

T16. Sub-clause 33, Supplemental Symbols and Pictographs, Fantasy beings addition

MAGE, FAIRY, VAMPIRE, MERPERSON, ELF, GENIE, ZOMBIE.

This is an arbitrary list of fantasy beings, and omits some very well-known types, such as GIANT, DWARF, GOBLIN and TROLL. In particular, a TROLL or TROLL FACE emoji is frequently requested, and has an extremely high expected usage in reference to internet trolls, and so at a minimum we suggest adding a TROLL character to the current amendment.

Proposed change by UK:

Add the following character to Supplemental Symbols and Pictographs:

TROLL or TROLL FACE.

WG2 discussion

Additions need to be discussed.

USA: Positive with comments

Technical comments:

TE.1. Enclosed Alphanumeric Supplement

The character U+1F12F is customarily called COPYLEFT SYMBOL. The term “COPYLEFT” is in wide use, including in multiple languages. It is found in Webster’s II New College Dictionary (2005). There is no need to use an obscure name that will not be widely recognized.

Proposed change by US:

We strongly support the current name for U+1F12F COPYLEFT SYMBOL

Propose noted

Editor review on some names

Following further review on characters added to this amendment, the editor found some discrepancy for the names proposed for the new characters in the block 2B00-2BFF Miscellaneous Symbols and Arrows between various documents produced by the UTC when preparing this amendment. It would probably be advisable to use the new names. Both sets are shown below.

Amendment 1 names:

@ Astrological symbols for Pluto

2BD4 ASTROLOGICAL PLUTO FORM TWO

2BD5 ASTROLOGICAL PLUTO FORM THREE

2BD6 ASTROLOGICAL PLUTO FORM FOUR

2BD7 ASTROLOGICAL PLUTO FORM FIVE

@ Uranian astrological symbols

2BE0 ASTROLOGICAL PLANET CUPIDO

2BE1 ASTROLOGICAL PLANET HADES

2BE2 ASTROLOGICAL PLANET ZEUS

2BE3 ASTROLOGICAL PLANET KRONOS

2BE4 ASTROLOGICAL PLANET APOLLON

2BE5 ASTROLOGICAL PLANET ADMETOS

2BE6 ASTROLOGICAL PLANET VULCANUS

2BE7 ASTROLOGICAL PLANET POSEIDON

New names:

@ Astrological symbols for Pluto

2BD4 PLUTO FORM TWO

2BD5 PLUTO FORM THREE

2BD6 PLUTO FORM FOUR

2BD7 PLUTO FORM FIVE

@ Uranian astrological symbols

2BE0 CUPIDO

2BE1 HADES

2BE2 ZEUS

2BE3 KRONOS

2BE4 APOLLON

2BE5 ADMETOS

2BE6 VULCANUS

2BE7 POSEIDON

---end