The document provided is merely a summary document pointing to dozens of external documents. This is not a user-friendly method of presentation. I’d never get away with that for Medieval Punctuation. The ESC should be professional, and summarize each character, rather than burden reviewers chasing up many complex documents with google histograms and other useless guff. I have not had time to chase them up. My comments refer to the material as presented in the summary document. My recommendations are given in italics at the end of each entry.

1. YAWNING FACE
Who needs this? There are already sleepy faces in the standard, and a face with a hand over its mouth. TIRED FACE and YAWNING FACE differ only in having a hand. I see no usage scenario where yawning and tiredness and sleepiness and being asleep need to be distinguished with graphic characters. Do not encode.

2. STANDING PERSON
This is not a good concept. In the first place the addition of graphic characters (or sequences) to represent human beings is problematic because of gender and skin colour. In the second, we have many emojis that indicate various human activities. “Standing” is not particularly notable, Homo erectus notwithstanding. This is a totally unnecessary addition, which has no reasonable usage case. And it is not in any way visually distinctive. Do not encode.

3. KNEELING PERSON
This is distinctive, but why does it have to be distinguished from PERSON IN LOTUS POSITION? And while kneeling is one position for some people in prayer, so is prostration. Will we be encoding PROSTRATE PERSON? If so, why not now? Add PROSTRATE PERSON or do not encode.

5 and 6. MECHANICAL ARM and MECHANICAL LEG
On the first place, PROSTHETIC is the usual term. In the second, who is going to use this? “Sorry, I’m going to be late. I can’t find my [mechanical-leg-emoji].” This isn’t about accessibility in a computing device sense. Humans use all sorts of devices to augment performance or overcome disabilities. Will we have a PACEMAKER and FALSE-TEETH emoji next? To be honest, a simple CRUTCH would fit the symbolic and metaphoric criteria for a good emoji. A ZIMMER FRAME would not. Do not encode either of these. Add CRUTCH emoji.
4. PROBING CANE

Is there any evidence that visually-impaired people make much use of emojis? Do we need a probing cane? For whom? What usage scenarios are there? Public signage on buses and trains often has an image for a blind person with a cane. (See below.) Why not encode that? The idea that this base character is being encoded as a graphic character in order to facilitate its use in sequencing is a bad one. This is not reasonably extensible, though any animal with eyes can be blind or blinded. Do not encode.

7. PINCH

The handshape as drawn does not look very PINCH-like. What is this for? The Hatter and the March Hare pinch the Dormouse to wake him. What is the usage scenario for this character? A metaphor for irritation? The glyph should be improved. I’ll probably do that in due course. Improve glyph.

8. EAR WITH HEARING AID

There exist genuine symbols in many places to indicate impaired hearing, usually a stylized ear with a diagonal stroke through it. Why not encode that? Encode the existing symbol.

9. SARI

Fine, since emojis have made the UCS into a sort of venue for dress-up-doll self-identification, but the image is hardly clear and identifiable. It looks like a conch shell. Improve glyph.
10. ONE-PIECE SWIMSUIT
Why? A person wanting to indicate the use of swimwear can’t use the existing BIKINI? Is this really necessary? What about a Victorian bathing costume? Or a wetsuit? Or water wings? Do not encode.

11. BRIEFS
Whose briefs? Is this a speedo? Lacey panties? Does it differ from underpants/underwear/pants? What’s it for? Who needs to send this in messaging? Where is the brassiere? Where is the dhoti? Why is this an emoji? Improve glyph.

12. SHORTS
I can find no objection, though as the reference glyph has pockets, it must not be women’s shorts. (Ironic.) Encode.

13. BALLET SHOES
I have no great objection, but the other shoes in the UCS are represented by a single one, so the plural is not necessary here. Yes, this will be a negative ballot comment. Encode as a single shoe with the name BALLET SHOE.

14. SERVICE ANIMAL VEST
Um, no. This doesn’t read as any kind of thing by itself, and while there may be canine, feline, and primate service animals, sequencing this with them will not produce a particularly distinctive glyph. And what’s wrong with just shoeing a dog? Emoji sequences are a dodge anyway. If you want to encode SERVICE DOG, encode SERVICE DOG. As to other service animals, These are largely a North American phenomenon, and it is not actually clear how widespread this is. Do not encode.

15. SLOTH
Yes, please. More animals. More dinosaurs. Also sloth is used metaphorically. There are other Deadly Sins too, though. Have they all been considered? Encode, but note that animals are not being dealt with systematically.

16. OTTER
The depiction is of a California sea otter which isn’t very universal. I like animal emojis but what is this for, metaphorically? It will certainly be used in the gay community, where otters indicate slender hairy men (contrasting with “bears”). Is that the intent? It’s likely to be very popular amongst that community. Encode with a reference glyph that isn’t a floating sea otter.

17. ORANGUTAN
Fine, but if we are going to be doing the Great Apes (since we have a GORILLA) we need CHIMPANZEE, and BONOBO, don’t we? Encode and add CHIMPANZEE.

18. SKUNK
No objection. Good metaphorical opportunities. What the annotation about colours for badgers means is unclear. Encode.

19. GUIDE DOG
This is fine. Again, SERVICE ANIMAL VEST is not acceptable and not necessary. Encode.

20. FLAMINGO
This is sure to be very popular amongst fans of Lewis Carroll. It goes well with hedgehogs. It’s not really very metaphorical. Encode.
21. OYSTER
Why is this being added? As a food animal? Or as a source for pearls? It’s not really very metaphorical. **Discuss and explain.**

22. GARLIC
Fine. **Encode.**

23. ONION
Fine. **Encode.**

24. FALAFEL
Keywords “falafel, meatball”? This is ridiculous. What is this for? Vegetarians? We have plenty of vegetables already. People who like Middle-Eastern food? Where is hummus, or dates? People who like spherical foods? **Do not encode.**

25. WAFFLE
The pat of butter and square shape in the reference glyph refers to American breakfast waffles. Waffles are enjoyed in other countries with other representations. I suppose English speakers will use this metaphorically for “speaking or writing at length in a vague or trivial manner”. **Encode.**

26. BUTTER
Fine. It’s not GHEE though. **Encode.**

27. BEVERAGE BOX
Who is this for? There’s no metaphoric use. **Encode, I guess.**

28. MATE DRINK
No objection. **Encode.**

29. ICE CUBE
Well, “originally proposed as ICEBERG” shows just how disorganized the Emoji Subcommittee’s process is. An ice cube and an iceberg are very very different things. The latter can certainly be used metaphorically. I suppose the first one could be too. Adding one and ignoring the other is not a good idea, and no, ICE CUBE and ICEBERG are in no way synonymous. **Encode both ICEBERG and ICE CUBE.**

30. HINDU TEMPLE
No objection. **Encode.**

32. MOTORIZED WHEELCHAIR
I object to encoding this promising ZWJ sequences and not saying what they are. I object to the ZWJ sequences in general because it is more pseudo-encoding. **Do not encode.**

33. MANUAL WHEELCHAIR
Duplicate character. We already have this at U+267F. This is more pointless invention. What’s it for? For sequencing so that it can be treated like, clothing? We’ll have old man and old woman and man and woman and boy and girl, with hair colours and skin tones? Is that the intention? It should be made explicit. **Do not encode.**
34. AUTO RICKSHAW
Why does it have to be petrol-driven? Where are the PULLED RICKSHAW and CYCLE RICKSHAW characters? Discuss.

35. PARACHUTE
I’d rather see the reference glyph as an isotype. Good metaphor character. Encode, use a better glyph.

36. RINGED PLANET
Long ago of course I devised such a glyph for the Last Resort font, to represent the Astral Planes. I guess that is the metaphoric use for this thing. In for a penny, in for a pound, however. Why not have all of the planets of our solar system represented? There’s plenty of room in the UCS, and just think of all the fun people will have with the 7th planet. Please do this properly. The three EARTH GLOBE characters do for Earth. Encode PLANET MERCURY, PLANET VENUS, PLANET MARS, PLANET JUPITER, PLANET SATURN (not RINGED PLANET), PLANET URANUS, and PLANET NEPTUNE.

37. DIVING MASK
Fine, I guess, though the image is for snorkeling, not diving so much. Encode.

38. YO-YO TOY
The word TOY is redundant. There is no other YO-YO to distinguish it from. And there is no trade-mark issue. Encode with the name YO-YO.

39. KITE
Fine. Should go next to parachute. Encode.

40. BANJO
There are many instruments. Why does this one get attention? It’s not used metaphorically. Discuss.

41. DIYA LAMP
No objection. Encode.

42. AXE
Another fine weapon for our collection. What’s the usage scenario? This can certainly be used for bullying and intimidation. Do not encode.

43. BLOOD DROP
The name should be DROP OF BLOOD. Encodeas DROP OF BLOOD.

44. ADHESIVE BANDAGE
Very handy. A good character. Encode.

45. STETHOSCOPE
Completely useless. We already have the STAFF OF AESCULAPIUS, and we already have doctors with various attributes. Why do we need an emoji for this particular object? Will we have a BLOOD PRESSURE CUFF next? Do not encode.
46. CHAIR
We have already U+1F4BA SEAT. What is the usage scenario for SITTING PERSON? Really? Do we really need to distinguish KNEELING PERSON from SITTING PERSON and STANDING PERSON? Do not encode.

47. RAZOR
I hope that this and AXE and DROP OF BLOOD are next to each other in the code chart. I have misgivings, but shaving seems a reasonable emoji concept. Encode with the name STRAIGHT RAZOR, or change the glyph to the less violent SAFETY RAZOR with a new glyph.

48, 49. Coloured hearts
No objection to adding WHITE HEART. I don’t know why anyone would wish to use a BROWN HEART. What is the rationale for this? Mindless attachment to the box of 8 Crayola crayons? There is a disease of stored apples and pears called “brown heart”. I don’t see a rationale for adding this except for completionism. I do not mind completionism, but if the ESC is going to insist on it here, then I think we had better look again at completing the set of dinosaurs. I’m not kidding. Also, coloured hearts should NOT be used in sequences. Encode only WHITE HEART unless there is a rationale for BROWN HEART.

50, 51, 52, 53, 54. Coloured circles
No real objection to the addition of these, but what _is_ missing is a discussion of how the existing RED CIRCLE and BLUE CIRCLE are actually used. The document has only said that they are widely used. This is inadequate documentation by the ESC. Are these five circles expected to be used in the same way? Discuss.

ON COLOUR SEQUENCING IN GENERAL
The example given in L2/16/141R2 is yet another example of erroneous thinking by the ESC. Somehow BEAR + WHITE SQUARE _or_ WHITE SQUARE + BEAR is supposed to indicate “white bear”. Perhaps this is a polar bear, though I would use BEAR + SNOWFLAKE for that. The error the ESC has made is due to a mistaken categorization based on English-language adjectival positions. A white bear is a bear which is white. A white bear is not a whiteness which is bearish. Therefore only BEAR + WHITE should be a valid sequence.

On TROLL, MAMMOTH, DODO, and dinosaurs
In WG2 and SC2 I have argued that the same principles for emoji additions which obtained when the first Japanese characters were added to the standard “for compatibility”. Certain conceptual sets were incomplete, and additional graphic characters (not necessarily to have the emoji property) were added for completeness of sets of characters in the Universal Character Set, which is a superset of whatever some vendors want to colourize and put into phones. The UCS will outlast the emoji fad. Does anyone really believe that an Emoji Subcommittee will be beavering away 70 years from now? At 50 emojis added per year... At the WG2 meeting in London, we were told that some vendors were worried that if we completed sets by adding things like TROLL, MAMMOTH, DODO, and some dinosaurs, there might be pressure to emojify them. Well, it is the vendors who are fuelling this fire. That’s the risk they must take. But the UCS is not for next quarter’s sales. It is for the preservation and interchange of data. As such it has a deep educational value. It is for this reason that I and other experts in SC2 have proposed such additions, and some of the additions proposed above (the PLANETs, ICEBERG, CRUTCH, CHIMPANZEE, SAFETY RAZOR.)
53, 54, 55, 56, 57, 58, 59. Coloured squares
Some of these new proposed characters are duplicates of existing characters. Those were referenced in document N4011 (L2/11-094) proposed a number of additions to augment an existing set of square boxes with a variety of hatchings useful for discussions of heraldic tinctures. The proposal for the utility of such geometric shapes for heraldicists remains open and valid. Some of these patterned boxes already exist, and the new characters proposed for emoji additions should make use of these.

<table>
<thead>
<tr>
<th>Proposed</th>
<th>Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1F7E5</td>
<td>RED SQUARE</td>
</tr>
<tr>
<td>25A5</td>
<td>SQUARE WITH HORIZONTAL FILL</td>
</tr>
<tr>
<td>1F7E6</td>
<td>BLUE SQUARE</td>
</tr>
<tr>
<td>25A5</td>
<td>SQUARE WITH VERTICAL FILL</td>
</tr>
<tr>
<td>1F7E7</td>
<td>ORANGE SQUARE</td>
</tr>
<tr>
<td>1F7E8</td>
<td>YELLOW SQUARE</td>
</tr>
<tr>
<td>1F7E9</td>
<td>GREEN SQUARE</td>
</tr>
<tr>
<td>25A7</td>
<td>SQUARE WITH UPPER LEFT TO LOWER RIGHT FILL</td>
</tr>
<tr>
<td>1F7EA</td>
<td>PURPLE SQUARE</td>
</tr>
<tr>
<td>25A8</td>
<td>SQUARE WITH UPPER RIGHT TO LOWER LEFT FILL</td>
</tr>
<tr>
<td>1F7EB</td>
<td>BROWN SQUARE</td>
</tr>
</tbody>
</table>

The standard already includes the following characters which can already be used for heraldic purposes. Proposed annotations are given.

- **25A1** WHITE SQUARE
  - used in heraldic hatching for argent or silver or white

- **25A4** SQUARE WITH HORIZONTAL FILL
  - used in heraldic hatching for azure or blue
  - used as an emoji character

- **25A5** SQUARE WITH VERTICAL FILL
  - used in heraldic hatching for gules or red
  - used as an emoji character

- **25A6** SQUARE WITH ORTHOGONAL CROSSHATCH FILL
  - used in heraldic hatching for sable or black

- **25A7** SQUARE WITH UPPER LEFT TO LOWER RIGHT FILL
  - used in heraldic hatching for vert or green
  - used as an emoji character

- **25A8** SQUARE WITH UPPER RIGHT TO LOWER LEFT FILL
  - used in heraldic hatching for purpure or purple
  - used as an emoji character

- **25A9** SQUARE WITH DIAGONAL CROSSHATCH FILL
  - used in English heraldic hatching for murrey or reddish purple

These characters are used as emoji characters

- **2B1B** BLACK LARGE SQUARE
  - used as an emoji character

- **2B1C** WHITE LARGE SQUARE
  - used as an emoji character
In order to compete the set of characters requested for emoji the following characters should be added:

- **🟙 1Fxxx** SQUARE WITH VERTICAL LINE AND DOT FILL
  - used in heraldic hatching for orange
  - used as an emoji character

- **🟚 1Fxxx** SQUARE WITH DOTTED FILL
  - used in English heraldic hatching for Or or gold or yellow
  - used as an emoji character
  - NOTE: the dots in this glyph will need to be made larger

At least the following could be added for additional support for heraldicists.

- **🟛 1Fxxx** SQUARE WITH HORIZONTAL LINE AND DOT FILL
  - used in English heraldic hatching for bleu celeste or light blue

- **🟜 1Fxxx** SQUARE WITH OFFSET VERTICAL LINE FILL
  - used in German heraldic hatching for carnation

- **🟝 1Fxxx** SQUARE WITH VERTICAL AND UPPER LEFT TO LOWER RIGHT FILL
  - used in English heraldic hatching for tenné or tawny, a light brown

- **🟞 1Fxxx** SQUARE WITH ALTERNATING HORIZONTAL AND VERTICAL LINE FILL
  - used in German heraldic hatching for ashen grey

Recently in L2/17-355 David P. Kendal proposed a set of 12 emoji colour modifiers, which could, subject to specific agreements, be used to specify the colour of characters. Taking Kendal’s proposal at face value, it might be sensible not to add a whole set of new characters, but to take existing hatching characters that map to them and then to add some additional hatched geometric shapes to fill the gaps.
Kendal requested emoji modifiers for 12 colours: red, orange, yellow, green, dark blue, light blue, pink, purple, brown, black, grey, white. Of these, 6 are encoded (the 7th, used for murrey, is given for completeness) and 6 would need to be encoded:

**A COMPLETE GUIDE TO HERALDRY**

It should be depicted in its really correct tones or tints, without any attempt to assimilate these with any heraldic tincture. It will not be found in the very ancient coats of arms, and its use is not to be encouraged. When a natural animal is found existing in various colours it is usual to so describe it, for the term ‘proper’ alone would leave uncertainty. For instance, the crest of the Lane family, which was granted to commemorate the ride of King Charles II behind Mistress Jane Lane as her servant, in his perilous escape to the coast after the disastrous Battle of Worcester, is blazoned ‘a strawberry roan horse, couped at the flanks proper, bridled sable, and holding between the feet an Imperial crown also proper’. Lord Cowper’s supporters were, on either side of the escutcheon, ‘a light dun horse proper, with a large blaze down the face, the mane close shorn except a tuft on the withers, a black list down the back, a bob tail, and the near fore-foot and both hind feet white’. Another instance that might be quoted are the supporters of Lord Newlands, which are: ‘On either side a dapple-grey horse proper, gorged with a riband and suspended therefrom an escutcheon gules, charged with three bezants in chevron.’ The crest of the family of Bewes, of St Neots, Cornwall, is: ‘On a chaseau gules, turned up ermine, a pegasus rearing on his hind legs of a bay colour, the mane and tail sable, winged or, and holding in the mouth a spig of laurel proper.’

There are and were always many occasions in which it was desired to represent armorial bearings in black and white, or where from the nature of the handicraft it was impossible to make use of actual colour. But it should always be pointedly remembered that unless the right colours of the arms could be used the tinctures were entirely ignored in all matters of handicraft until the seventeenth century. Various schemes of hatchings, however, were adopted for the purpose of indicating the real heraldic colours when arms were represented and the real colours could not be employed, the earliest being that of Francquart in Belgium, circa 1633. Woodward says this was succeeded by the systems of Butkens, 1626; Petra Sancta, 1639; Lobkowitz, 1639; Gelenius; and De Rouck, 1645; but all these systems differed from each other, and were for a time the cause of confusion and not of order. Eventually, however, the system of Petra Sancta (the author of Tesseract Gentilitia) superseded all the others, and has remained in use up to the present time.

Upon this point Herr Ströhli in his Heraldischer Atlas remarks: ‘The system of hatchings used by Marcus Vulson de la Colombière, 1639, in the course of time found acceptance everywhere, and has maintained itself in use unaltered until the present day; these are shown in 35, only that later, hatchings have been invented for brown, grey, &c.; which, however, seems rather a superfluous enriching.’ None of these later creations, by the way, have ever been used in this country. For the sake of completeness, however, let them be mentioned (see 36): *a*, brown; *k*, blood-red; *c*, earth-colour; *d*, iron-grey; *e*, water-colour; *f*, flesh-colour; *g*, ashen-grey; *h*, orange; and *i*, colour of nature. In English armory ‘tennes’ is represented by a combination of horizontal (as azure) lines with diagonal lines from sinister to dexter (as purpure), and sanguine or murrey by a combination of diagonal lines from dexter to sinister (as vert), and from sinister to dexter (as purpure).

The hatchings of the shield and its charges always accommodate themselves

**Figure 1.** Text from Fox-Davies 1985 describing tincturing and showing various styles of hatching. (This is one of the most authoritative of texts on heraldry.)
to the angle at which the shield is placed, those of the crest to the angle of the
helmet. A curious difficulty, however, occurs when a shield, as is so often the case
in this country, forms a part of the crest. Such a shield is seldom depicted quite
upright upon the wreath. Are the tincture lines to follow the angle of the smaller
shield in the crest or the angle of the helmet? Opinion is by no means agreed upon
the point.

But though this system of representing colours by 'hatching' has been adopted
and extensively made use of, it is questionable whether it has ever received official
sanction, at any rate in Great Britain. It certainly has never been made use of in any
official record or document in the College of Arms. Most of the records are in
colour. The remainder are all without exception 'tricked', that is, drawn in out-
line, the colours being added in writing in the following contracted forms: 'O',
or 'or', for or; 'A', 'ar', or 'arg', for argent; 'G', or 'gu', for gules; 'Az', or 'B'
(for blue, owing to the likelihood of confusion between 'ar' and 'az', 'B' being
almost universally used in old trickings), for azure; 'S', or 'sa', for sable; 'Vt' for
vert, and 'Purp' for purpure. It is unlikely that any change will be made in the
future, for the use of tincture lines is now very rapidly being discarded by all good
heraldic artists in this country. With the reversion to older and better forms and
methods these hatchings become an anachronism, and save that sable is represented
by solid black they will probably be unused and forgotten before very long.

The plain, simple names of colours, such as red and green, seemed so un-
poetical and unostentatious to the heralds and poets of the Middle Ages, that they
substituted for gold, topaz; for silver, pearl or 'meetries'; for red, ruby; for blue,
sapphire; for green, emerald; and for black, diamond or 'zobel' (sable, the animal,
whence the word 'sable'). Let the following blazonment from the grant of arms to
Mödling bei Wien in 1458 serve as example of the same: 'Mit namen ain Schilt
gleich getait in fasse, des ober und maister tail von Rubin auch mit ainer fasse
von Berlein, der unter thail von grunt des Schlits von Schamaragaden, darin-
nein Pantel von Silber in Rampant'—(lit. 'Namely, a shield equally divided in
fess, the upper and greater part of ruby, also with a fess of pearl, the under part
of the field of the shield of emerald, therein a panther of silver, rampant'); that is,
'Per fess gules and vert, in chief a fess argent, in base a panther rampant of the
last.'

Even the planets, and, as abbreviations, their astronomical signs, are occasion-
ally employed: thus, the sun for gold, the moon for silver, Mars for red, Jupiter
for blue, Venus for green, Saturn for black, and Mercury for purple. This aberration
of intellect on the part of medieval heraldic writers, for it really amounted to
little more, had very little, if indeed it had any, English official recognition. No
one dreams of using such blazon at the present time, and it might have been
entirely disregarded were it not that Guilium sanctions its use; and he being the
high priest of English armory to so many, his example has given the system a
certain currency. I am not myself aware of any instance of the use of these terms
in an English patent of arms.

The furs known to heraldry are now many, but originally they were only two,
'ermin~' and 'vair'. Ermine, as every one knows, is of white covered with black
spots, intended to represent the tails of the animal. From ermine has been evolved
the following variations, viz. ermines, erminois, pean, and erminites. 'Ermines' is

Figure 2. Text from Fox-Davies 1985 describing tincturing and showing various styles of hatching.
(This is one of the most authoritative of texts on heraldry.)