Final proposal to encode Taiwanese kana (臺灣語假名) in the UCS

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Psihedelisto

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Changes since 9 November 2020: Accepted all round two changes requested by Script Ad Hoc.
Changes since 27 October 2020: Accepted all changes requested by Script Ad Hoc.
Changes since 23 September 2020: Accepted all changes requested by Eiso Chan in L2/20-233.

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ACKNOWLEDGEMENTS
in no particular order...

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For his patient explanation of the history of Mojikyō, and his priceless help in getting Mojikyō Character Map working on my computer.

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For her tireless review of script proposals by n00bs like me.

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For his recommendation that I name the tone letters like MODIFIER LETTER KATAKANA instead of just KATAKANA as I originally planned; I did not know modifier letters could be non-Latin, but he knew of the precedent of U+10FC — MODIFIER LETTER GEORGIAN NAR (ʼ).

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For his experience with Mojikyō, Unicode, and all around good advice.

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For kindly giving me a Taiwanese Hokkien name (also usable for Mandarin Chinese), for use in this proposal.

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For his font development advice, and helpful advice regarding Unihan.

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For helping me choose good shapes for the glyphs as a Japanese learner of Hokkien who writes in Taiwanese kana daily, and providing me with several difficult to find resources.

Simon Cozens (カズンズンオ文) & Caleb Maclennan, ST1E
For their help with ST1E, an experimental typesetting engine and alternative to IMTeX.
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Chapter 1
Quick summary

For copyable names, see § Unicode considerations.
I propose a new block, in the Supplementary Multilingual Plane, to be called Kana Extended-B. I propose that the new block be given range U+1AFF0 – U+1AFFF, and that it include:

1.1 Tone marks

\ KATAKANA LETTER MINNAN TONE-2
Mojikyō 69622; proposed representation U+1AFF0
  • In Minnan, also used for tone six¹

\ KATAKANA LETTER MINNAN TONE-3
Mojikyō 69623; proposed representation U+1AFF1

\ KATAKANA LETTER MINNAN TONE-4
Mojikyō 69624; proposed representation U+1AFF2

\ KATAKANA LETTER MINNAN TONE-5
Mojikyō 69625; proposed representation U+1AFF3

\ KATAKANA LETTER MINNAN TONE-7
Mojikyō 69627; proposed representation U+1AFF5

\ KATAKANA LETTER MINNAN TONE-8
Mojikyō 69628; proposed representation U+1AFF6

¹ For more discussion of this issue, and why I’m proposing we leave U+1AFF4 and U+1AFFC open, please see § On tone six.
1.2 Nasalized tone marks

・KATAKANA LETTER MINNAN NASALIZED TONE-1
Mojikyō 69629; proposed representation U+1AFF7

・KATAKANA LETTER MINNAN NASALIZED TONE-2
Mojikyō 69630; proposed representation U+1AFF8
  • In Minnan, also used for tone six\(^1\)

・KATAKANA LETTER MINNAN NASALIZED TONE-3
Mojikyō 69631; proposed representation U+1AFF9

・KATAKANA LETTER MINNAN NASALIZED TONE-4
Mojikyō 69632; proposed representation U+1AFFA

・KATAKANA LETTER MINNAN NASALIZED TONE-5
Mojikyō 69633; proposed representation U+1AFFB

・KATAKANA LETTER MINNAN NASALIZED TONE-7
Mojikyō 69635; proposed representation U+1AFFD

・KATAKANA LETTER MINNAN NASALIZED TONE-8
Mojikyō 69636; proposed representation U+1AFFE

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1. For more discussion of this issue, and why I’m proposing we leave U+1AFF4 and U+1AFFC open, please see § On tone six.
1.3 Combining characters

Note: The two below are provided for informational purposes and would be unified with existing characters. Notes are about Taiwanese kana.

◌̣ COMBINING DOT BELOW
Mojikyō 69202; U+0323
• Indicates aspiration; native name sàng-kbi hû [送氣符]. For example, while タア is /ta/, タァ is /tʰa/.
• At least one source renders it identically to the nakaguro (中黒);
→ • U+30FB KATAKANA MIDDLE DOT

◌̅ COMBINING OVERLINE
Mojikyō 69637–69642; U+0305
• Makes the kana it combines with /t/ in the case of チ̅ (/ti/) and ツ̅ (/tu/); or adds a /t/ as in ツ̅ (/tsa/ or /tse/) and セ̅ (/tse/ or /tɕe/); or changes vowel sound as in ウ̅ (/ɨ/) and オ̅ (/ə/)
• Sometimes rendered identically to the chōonpu (長音符; U+30FC; KATAKANA–HIRAGANA PROLONGED SOUND MARK), so チ in place of チ.

For the dotted and overline characters, no widely accepted names are in use. No Unicode Named Character Sequences are requested.

2. Mojikyō chose to encode the versions of the katakana with combining overline above separately, so this refers to the individual katakana they encoded. In Mojikyō order: サチツセソウ. They are missing オ and ウ.
Chapter 2
Overview

2.1 Linguistic

Taiwanese Hokkien (臺語) is a Sinitic Southern Min language spoken throughout the world; as of 2013, it was spoken by 48 million people. It is spoken as far afield as the Philippines, where it is known as Fookien. In ISO 639–3, it is known as Min Nan.

In Taiwan, Hokkien is a widely spoken language, and is even used in academic writing. The most popular way of writing Hokkien is known as Hàn-lô (漢羅), which to untrained eyes may appear to be *mojibake*...

“艋舺講無台灣來è學生來修。Tī中级班，有一個讀電腦è博士生；初級班有一個客家人，讀設計碩士班。”

However, it is not; what is happening is that 10–15% of Hokkien phonemes are not representable as a standardized Chinese character. So, reading Hokkien only in Chinese characters, called Tâi-lô (臺羅), and the older Pe̍h-ōe-jī (白話字) upon which it is based, along with, more rarely, chṳ̂-im hû-hô (注音符號), known elsewhere as *bopomofo*, are mixed in with the Chinese characters. Indeed, there’s no reason Taiwanese kana can’t be used for this purpose:

“艋舺講無台灣來è学生來修。Tī中级班，有一個讀電腦è博士生；初級班有一個客家人，讀設計碩士班。”

But perhaps we’re getting ahead of ourselves.

2.2 Historic (Taiwanese...kana?)

If I were given the task of naming Taiwanese kana, or, perhaps better said, translating their Hokkien/Japanese name, I would have named them “Hokkien kana”. Because,


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indeed, that’s what they are; historically speaking, there’s nothing Taiwanese about Taiwanese kana except that they can be used to write Taiwanese Hokkien. Indeed, they are not even exclusively Taiwanese, as they are also suitable for writing the Quanzhou dialect.

Taiwanese kana were invented by Japanese linguists on behalf of the imperial Japanese government, which at the time of their introduction, was pursuing a policy of dōka (同化), meaning, “assimilation”. The period we most remember them for today was the period of the 1930’s, when they were spread primarily to teach Taiwanese people Japanese.\(^3\)

The primary person involved in their creation was the linguist Naoyoshi Ogawa [小川尚義].\(^4\) The first of Ogawa’s works that they make a notable appearance in is the Japanese–Taiwanese Daijiten (日台大辭典) of 1907.\(^5\) Another early example is a textbook from 1902, the Textbook for Taiwan (台灣教科用書). Ogawa continued to refine them until he published his greatest work, the two volume Comprehensive Taiwanese–Japanese Dictionary [臺日大辭典] (1931). Indeed, it is entirely on the back of this work that modern interest in them continues, with the dictionary continuing to receive updates long after the collapse of the Japanese empire; even famed Taiwanese linguist Âng Úi-jîn contributed substantially to an update of the dictionary in 1993, published as the Minnan Classic Dictionary Collection (閩南語經典辭書彙編).

Due to the high quality of this dictionary, which even informed the Taiwanese government’s own Dictionary of Frequently-Used Taiwan Minnan [臺灣閩南語常用詞辭典] (1st ed. 2011),\(^6\) Japanese learners of Hokkien continue to use Taiwanese kana even today.\(^7\) But, of course, this is not the only reason to encode Taiwanese kana; they are interesting in and of themselves, as a historical writing system with a large body of work behind it.

Even in Ogawa’s time, he was not the only author; other Japanese scholars recognized the quality of his work, and many other works exist which integrate Taiwanese kana, such as the Taiwan Proverb Collection [臺灣俚諺集覽] (1914) and the State Monopoly Bureau’s Taiwanese Dictionary [專賣局台灣語典] (1923), which, unlike Ogawa’s work, mixed Pèh-ōe-jī with Taiwanese kana.

7. For two examples of Japanese learners of Hokkien who use Taiwanese kana, see the Twitter profiles of Soaⁿ-kiā (@suannkiä) and Taipa (@taipalogy).
In our time, besides being used as a substantial basis for the *Dictionary of Frequently-Used Taiwan Minnan*, Āng Ùi-jîn’s version of the dictionary lives on due to a project of Lîm Chùn-io̍k [林俊育] of the Academia Sinica: taigi.fhl.net/dict. This impressive work is a complete digitization of the 1993 dictionary, and when you search for terms, you are given links to individual pages of it. For example, searching 夢, meaning “dream”, brings up page 555 of volume 2, which brings up quite a detailed entry, which differentiates between frightening dreams/nightmares (恐ろしい夢) and merely bad dreams (悪い夢); between being told about a dream (夢の告を受ける) from dream interpretation (夢判断):

---

夢

夢の告を受ける

夢判断
2.3 Legacy encodings

2.3.1 Pseudo-Unicode encodings

A “pseudo-Unicode” encoding is currently in use on Wikipedia and elsewhere. This “encoding”, to the extent that it is one, mixes SVG glyphs, HTML markup, and a few Unicode characters intended for other purposes.

- U+1AFF0–1AFFE are represented with SVG’s;
- U+0323, the COMBINING DOT BELOW, is used as in this document; and
- U+0305, the COMBINING OVERLINE, is represented variably by a CSS border-top, or else by a COMBINING MACRON (U+0304) or other script-inappropriate combining mark. It seems this is done due to lack of font support for combining marks over katakana.

A second pseudo-Unicode encoding exists, which I call the “Taipa encoding”. It misuses characters like U+27E8, MATHEMATICAL LEFT ANGLE BRACKET, because of its similar appearance to tone 5, 礎. It does not seem to have widely caught on outside of Taipa’s tweets; certainly this kind of misuse is a good reason to introduce real characters for the task.

2.3.2 Mojikyō

Mojikyō almost fully supports Taiwanese kana. Its only deficiency is that it is missing ˧ and ʔ, which means that the Quanzhou dialect is not reproducible in the Mojikyō encoding.

In Mojikyō, the Taiwanese kana are available in the font Mojikm0D.TTF; 20 code-points are devoted to them. Mojikyō chooses to encode the COMBINING OVERLINE as precombined with the kana it combines with, and it encodes the COMBINING DOT BELOW as a spacing mark.
As mentioned in § Acknowledgements, Mr. Tanimoto and Mr. Yamaguchi helped me a lot with getting this program working. I was quite touched by Mr. Tanimoto’s story, so I chose to memorialize his friend, Mr. Tokio Furuya, who is now deceased, on the front cover of this paper. Mr. Furuya was the main developer of Mojikyō.

Below are the Taiwanese kana glyphs as they appear in Mojikm0D.TTF; the top row are the tone letters, middle row nasalized tone letters, and bottom row overlined katakana:

\[ \text{\开始中文} \]

\[ \text{サチツソソウ} \]
Chapter 3
Unicode considerations

3.1 UnicodeData.txt

1AFF0;KATAKANA LETTER MINNAN TONE-2;Lm;0;L;;;;;N;;;;;
1AFF1;KATAKANA LETTER MINNAN TONE-3;Lm;0;L;;;;;N;;;;;
1AFF2;KATAKANA LETTER MINNAN TONE-4;Lm;0;L;;;;;N;;;;;
1AFF3;KATAKANA LETTER MINNAN TONE-5;Lm;0;L;;;;;N;;;;;
1AFF5;KATAKANA LETTER MINNAN TONE-7;Lm;0;L;;;;;N;;;;;
1AFF6;KATAKANA LETTER MINNAN TONE-8;Lm;0;L;;;;;N;;;;;
1AFF7;KATAKANA LETTER MINNAN NASALIZED TONE-1;Lm;0;L;;;;;N;;;;;
1AFF8;KATAKANA LETTER MINNAN NASALIZED TONE-2;Lm;0;L;;;;;N;;;;;
1AFF9;KATAKANA LETTER MINNAN NASALIZED TONE-3;Lm;0;L;;;;;N;;;;;
1AFFA;KATAKANA LETTER MINNAN NASALIZED TONE-4;Lm;0;L;;;;;N;;;;;
1AFFB;KATAKANA LETTER MINNAN NASALIZED TONE-5;Lm;0;L;;;;;N;;;;;
1AFFD;KATAKANA LETTER MINNAN NASALIZED TONE-7;Lm;0;L;;;;;N;;;;;
1AFFE;KATAKANA LETTER MINNAN NASALIZED TONE-8;Lm;0;L;;;;;N;;;;;

3.2 On tone six

In modern Hokkien, tone six is equal to tone two. A symbol, therefore, for tone six, is not in frequent use. However, I found a single source with a symbol for tone six, Taigikho (2017), and recommend we leave a slot open for it should it become more popular in the future, or should more sources emerge, so we have a logical place to put it. Even in Taigikho (2017), however, the symbol is barely discernible, as shown below, and it seems to be that they are trying to discourage its use.

3.3 **On the aspiration mark**

The aspiration mark is quite unusual in that in some sources it acts as a combining character,\(^2\) and in other sources, it appears identically to the *nakaguro* (中黒).\(^3\)

As they are semantically the same, this issue should be left to higher-level protocols, such as fonts, to solve, via e.g. stylistic alternates. It is likely that in the sources where it appears as a *nakaguro*, this is only due to subpar printing technology, as it’s clear it’s meant to have been combining by Ogawa.

3.4 **On glyph order**

It makes the most sense to use the glyph order from Ång and Ogawa (1992). It is a simple order: basic Japanese kana order (*gojūon*, 五十音), with tone letters in numerical order and nasalized versions after normal versions. Overlined versions of characters come after regular versions, and aspirated versions come after those.

So:

3.4.1 **Tone letters**

/ < 6 < \ < 9 < 𝄸 < 0 < 𝄷 < Montserrat < | < Montserrat < \ < Montserrat

3.4.2 **Combining characters**

타 < 탠\(^4\)

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2. Ogawa (1932), Ång and Ogawa (1992), Taigikho (2017), among others.
3. *State Monopoly Bureau's Taiwanese Dictionary* [專賣局台灣語典] (1923), among others.
3.5 Vertical typesetting

Taiwanese kana are most often typeset vertically historically. All horizontally typeset examples I was able to find are from this century, e.g., on Wikipedia:

Taiwanese kana (タイノー ファヌー ギイ / カア / ビエンく) is a katakana-based writing system that was used to write Taiwanese Hokkien (commonly called "Taiwanese") when the island of Taiwan was under Japanese rule. It functioned as a phonetic guide to hanzi, much like furigana in Japanese or Zhuyin fuhao in Chinese. There were similar systems for other languages in Taiwan as well, including Hakka and Formosan languages.

As far as Unicode is concerned, all we need is to put this in `VerticalOrientation.txt`:

1AFF0..1AFFE ; U # Lc [13] KATAKANA LETTER MINNAN TONE-2..KATAKANA LETTER MINNAN NASALIZED TONE-8

For this paper, I am using a SIL package I wrote to do the vertical layout. Looking at the vertical layout, there are two ways to do it. In this paper, I consider it to be two lines, with the tone letter on the second line. It is also possible to do so in OpenType via contextual positioning, like this:

```plaintext
feature valt
  lookup valt2
    # Make glyph 0-width and move it back 1.5 glyphs;
    # takes advantage of fact kana are monospace.
    # x  y  xadv  yadv
    pos @toneletters.valt <-1300 500 0 0>; valt2;
  valt;
```

Vertical layout is really a problem to be handled by higher level protocols, and not a Unicode consideration, but is mentioned for completeness.

For a fully working OpenType implementation, see FRB Taiwanese Kana, which is a font I made originally for this proposal but which can be used for Taiwanese kana in general. It works with HTML vertical layout, and has bolder glyphs for ruby:

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5. Ång and Ogawa (1992), vol. 1, pp. 610–611.
No special actions need be taken, nor JavaScript be used, the HTML for the last example is just:

```html
<p class=vert><ruby><rt>臺</rt><rt>タイ</rt><ruby><rt>語</rt><rt>ギイ</rt></ruby></p>
```

### 3.6 On naming

Finally, I will explain my reasoning for why I am requesting the glyph names I am requesting. I have very deliberately chosen not to include a reference to Taiwan in either the names of the characters or the name of the requested block. In China, even the word Taiwan is politically sensitive, as is the period of Japanese rule. Further, Taiwanese kana write the Hokkien language, which is also spoken in mainland China. Indeed, the Quanzhou dialect, historically named the “Chinchew dialect”, gets its name from the city of Quanzhou (泉州市). Second of all, the Taiwanese kana were used occasionally in imperial Japan in the linguistic study of other Chinese languages, though the vast majority of surviving sources and modern use is in/for Hokkien.

The UTC should be aware of this issue when deciding on naming. My proposal originally asked the UTC to name the characters Hokkien. Eiso Chan, however, thought that Min Nan would be better, as this is the name used by ISO 639–3, and submitted the comment document L2/20-233. I strongly agree, and have revised the character names in my proposal accordingly.
3.7 On shakuhachi notation

The shakuhachi (尺 八) is a traditional Japanese instrument, which looks similar to a flute. It has a traditional notation scheme known as shakuhachi gakufu (尺八楽譜).

As seen below, in shakuhachi, the combining characters mentioned in this proposal do not combine the same way in vertical writing. They combine on the right, as is more common in CJK contexts.

I agree with Eiso Chan’s recommendations in L2/20-233. I am hopeless when it comes to musical subjects, so a more complete shakuhachi proposal will not be forthcoming from me, and it is out of the scope of this proposal. However, I immediately understand the wisdom of a registered OpenType feature such as skhc. As far as Unicode is concerned, Chan’s recommended changes to NameList.txt and UAX#50 are in my opinion sound.

6. Via Tenzan Yamada (山田典山): 情熱大陸の尺八譜
Chapter 4
Evidence of all requested characters

4.1 Tone letters
Áng and Ogawa (1992), vol. 1, p. 3.

4.2 Combining characters
Áng and Ogawa (1992), vol. 1, p. 5.
Âng and Ogawa (1992), vol. 1, p. 3. Proof of $\Upsilon$ and $\Upsilon'$, missing from main table.
4.3 Miscellaneous pages

Hirasawa (1914), p. 147.
Textbook for Taiwan [台湾教科用書] (1902).

The above book is another corroborating source for the equality of tone two (上声) and tone six (上声) in Hokkien, as well.
先生が本を読んでいます。生徒を、静かに、聞いています。
先生が生徒に講義し、学ぶ生徒が話しながら聴いています。
Chapter 5
Bibliography

- Hirasawa, Teiakira (1914). *Taiwan Proverb Collection* [臺灣俚諺集覽]. Governor-General of Taiwan, Imperial Government of Japan.
  - Volume 1 (1931)
  - Volume 2 (1932)
- Ogawa, Naoyoshi (1938). *New Japanese–Taiwanese Dictionary* [新訂日台大辞典]. (One volume only, second never completed.)

1. Meiji 35 (明治35年)

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**ISO/IEC JTC 1/SC 2/WG 2**  
**PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS**  
**FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646**

Please fill all the sections A, B and C below.


Please ensure you are using the latest Form from [http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html](http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html) for latest Roadmaps.

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### A. Administrative

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<th>1. Title:</th>
<th>A proposal to encode Taiwanese kana in the UCS</th>
</tr>
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<tbody>
<tr>
<td>2. Requester's name:</td>
<td>Fredrick R. Brennan</td>
</tr>
<tr>
<td>3. Requester type (Member body/Liaison/Individual contribution):</td>
<td>Individual contribution</td>
</tr>
<tr>
<td>5. Requester's reference (if applicable):</td>
<td>N/A</td>
</tr>
<tr>
<td>6. Choose one of the following:</td>
<td>X</td>
</tr>
</tbody>
</table>

**More information will be provided later:**

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### B. Technical – General

1. Choose one of the following:
   - a. This proposal is for a new script (set of characters): **X**
     - Proposed name of script: Kana Extended-B
   - b. The proposal is for addition of character(s) to an existing block:
     - Name of the existing block: 

2. Number of characters in proposal:

3. Proposed category (select one from below - see section 2.2 of P&P document):
   - A-Contemporary **X**
   - B.1-Specialized (small collection) 
   - B.2-Specialized (large collection) 
   - C-Major extinct 
   - D-Attested extinct 
   - E-Minor extinct 
   - F-Archaic Hieroglyphic or Ideographic 
   - G-Obscure or questionable usage symbols

4. Is a repertoire including character names provided? **Yes**
   - a. If YES, are the names in accordance with the “character naming guidelines” in Annex L of P&P document? **Yes**
   - b. Are the character shapes attached in a legible form suitable for review? **Yes**

5. Fonts related:
   - a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard? Fredrick R. Brennan
   - b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): Fredrick R. Brennan <copypaste@kittens.ph>. Font name is FRB Taiwanese Kana. It's SIL OFL licensed. 

6. References:
   - a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? **Yes**
   - b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? **Yes**

7. Special encoding issues:
   - Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? **Yes**
     - I discuss the order characters should be in, and issues presented by vertical typesetting.

8. Additional Information:
   - Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode Standard at [http://www.unicode.org](http://www.unicode.org) for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.
### C. Technical - Justification

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has this proposal for addition of character(s) been submitted before?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?</td>
<td>Yes</td>
<td>MojiKyō Institute, Academia Sinica, Eiso Chan</td>
</tr>
<tr>
<td>3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?</td>
<td>Yes</td>
<td>Japanese learners of Hokkien, Taiwanese scholars of Japanese imperial era</td>
</tr>
<tr>
<td>4. The context of use for the proposed characters (type of use; common or rare)</td>
<td>Rare</td>
<td></td>
</tr>
<tr>
<td>5. Are the proposed characters in current use by the user community?</td>
<td>Yes</td>
<td>Twitter, Facebook, etc.</td>
</tr>
<tr>
<td>6. After giving due considerations to the principles in the P&amp;P document must the proposed characters be entirely in the BMP?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>11. Does the proposal include use of combining characters and/or use of composite sequences?</td>
<td>Yes</td>
<td>Existing combining characters are used. See page 7.</td>
</tr>
<tr>
<td>12. Does the proposal contain characters with any special properties such as control function or similar semantics?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>13. Does the proposal contain any Ideographic compatibility characters?</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>