This proposal, officially supported by the International Phonetic Association after evaluation by the IPA Alphabets, Charts and Fonts Committee (Nicolaides 2024), requests twelve combining IPA and extIPA diacritics. The requested characters are raised variants of Unicode-supported diacritics below, and are intended for use on letters that have descenders or that already bear diacritics below. Historical ⟨◌ᵊ ◌ᵋ⟩ are requested as a pair.

**Positional variants of IPA diacritics—below**

The 1996 IPA chart, reproduced in the 1999 *Handbook*, says that “diacritics may be placed above a symbol with a descender.” Such placement is common, as in voiceless [ŋ̊] or syllabic [ŋ̊], but also occurs to avoid the stacking of subscript diacritics, as with the apical fricative trill [r̩] in Figure 4.

Ladefoged (1993: 32 fn) notes that the diacritic-above option can lead to ambiguity, as there is potential conflict between nasalized [j̊] and creaky-voice [j̊], between centralized [ẙ] and breathy-voice [ẙ], and between rising-tone [ŋ̊] and modal-voice [ŋ̊]. The wording of the 2020 IPA chart has therefore been changed to “some diacritics,” but does not specify which. In practice, any diacritic that would not be ambiguous (that is, any diacritic other than ⟨◌D, ◌F, ◌H⟩) may occur above the letter.

One potentially problematic diacritic is the subscript minus ⟨◌⟩ (retracted articulation), which if placed above the letter might be mistaken for a macron ⟨◌⟩ (mid tone). Nonetheless, a superscript minus for retraction is attested in the literature (Figures 3–4). Typographers could address the distinction the same way they do U+0331 ⟨◌⟩ COMBINING MACRON BELOW and U+0320 ⟨◌⟩ COMBINING MINUS SIGN BELOW, for instance by making the minus, ⟨◌⟩, the same width as the plus sign ⟨◌⟩ (advanced articulation) and visibly shorter than the macron. It would perhaps be good practice not to use a minus-above in a document that also uses the macron, but such judgements are best left to the writer and publisher, and in any case the underlying data structure needs to be distinct.

The literature attests to most subscript IPA diacritics being placed above the letter, such as apical [ʒ] and laminal [ʒ] in Pavlík (2004), with the two missing diacritics appearing to be accidental gaps. Superscript variants of extIPA diacritics are rarer but have the support of the International Clinical Phonetics and Linguistics Association (ICPLA), which governs the extIPA: president Vesna Mildner, former president Martin Ball, vice-president Vesna Stojanovik and secretary Joanne Cleland (p.c. Nov. 2021). With the additional agreement of the Alphabets, Charts and Fonts Committee of the IPA, we request superscript Unicode characters for historical ⟨◌ᵊ ◌ᵋ⟩ and for all modern IPA and extIPA diacritics.
**Current Unicode support**

The positional pairs of IPA and extIPA diacritics currently supported by Unicode are:

<table>
<thead>
<tr>
<th>Diacritic</th>
<th>combining mark below</th>
<th>combining mark above</th>
</tr>
</thead>
<tbody>
<tr>
<td>voiceless</td>
<td>U+0325 ̧</td>
<td>U+030A ̧</td>
</tr>
<tr>
<td>dental</td>
<td>U+032A ̧</td>
<td>U+0346 ̨ (dentolabial in extIPA)</td>
</tr>
<tr>
<td>more rounded</td>
<td>U+0339 ̧</td>
<td>U+0357 ̧</td>
</tr>
<tr>
<td>less rounded</td>
<td>U+031C ̧</td>
<td>U+0351 ̧</td>
</tr>
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<td>advanced</td>
<td>U+031F ̧</td>
<td>U+1AC8 ̧</td>
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<td>U+0329 ̧</td>
<td>U+030D ̧</td>
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<td>U+032F ̧</td>
<td>U+0311 ̧</td>
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<td>raised</td>
<td>U+031D ̧</td>
<td>U+1DF5 ̧</td>
</tr>
<tr>
<td>lowered</td>
<td>U+031E ̧</td>
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</tr>
<tr>
<td>labialized (retired)</td>
<td>U+032B ̧</td>
<td>U+1AC7 ̧</td>
</tr>
<tr>
<td>spread (extIPA)</td>
<td>U+034D ̧</td>
<td>U+20E1 ̣ (for mathematical use)</td>
</tr>
<tr>
<td>strong (extIPA)</td>
<td>U+0348 ̧</td>
<td>U+030E ̧</td>
</tr>
<tr>
<td>offset right (extIPA)</td>
<td>U+0354 ̧</td>
<td>U+1DFE ̧</td>
</tr>
<tr>
<td>offset left (extIPA)</td>
<td>U+0355 ̧</td>
<td>U+0350 ̧</td>
</tr>
</tbody>
</table>

The down tack above U+1ADB ̧ is in the Unicode pipeline. Originally part of this proposal, it was moved to L2/23-206R (Harrington diacritics) because it is attested in the Harrington corpus.

In addition to their combining forms, the four tacks have spacing variants that are intended for use when there is no room below the letter for a combining diacritic. Two are in use today: raised ⟨˔⟩ (U+02D4) for combining ⟨◌̝⟩ (U+031D), and lowered ⟨˕⟩ (U+02D5) for combining ⟨◌̞⟩ (U+031E). The other pair date from when they meant ‘advanced’ (fronted) and ‘retracted’ (backed) in the IPA: ⟨‡⟩ (U+AB6B) for combining ⟨◌‡⟩ (U+0319) and ⟨‰⟩ (U+AB6A) for combining ⟨◌‰⟩ (U+0318). The spacing variants can be awkward, for example when followed by a length sign ⟨ː⟩ or ⟨ˑ⟩, and today the combining diacritics above are often preferred.

**Needed support**

Of the combining tacks above, we can attest to ⟨˒⟩, ⟨˒⟩ and ⟨˒⟩ in the literature, ⟨˒⟩ with its old value of ‘retracted’. The lack of attestation for ⟨˒⟩ would thus appear to be an accidental gap. ⟨˒⟩ is already present in Unicode for non-IPA use, and ⟨˒⟩ was recently accepted by the UTC, partially on IPA evidence; we therefore request the left and right tacks ⟨˒⟩ and ⟨˒⟩.
The remaining standard IPA diacritics that are unsupported above the letter are apical U+033A ṽ, laminal U+033B ̃, retracted U+0320 ̲ and linguolabial U+033C Ž. We have found all but the linguolabial in the literature. Linguolabial sounds are rare, being found in only a handful of languages and in disordered speech, and in addition the diacritic is usually limited to letters for dental and alveolar consonants, few of which have descendents. It might of course be placed above a letter that has another diacritic below, such as the voicing diacritic ⟨⟨⟩⟩ that must remain below to avoid ambiguity. It does however co-occur with a descender in [k̼] (an example on the extIPA Chart) and in the para-lexical linguolabial click [l̼]. In both of these cases the carrying letter has an ascender as well as a descender, but fonts may supply more space for diacritics above a letter than below, and some authors prefer diacritics above when a letter has both an ascender and a descender. (See for example ⟨⟨⟩⟩ in Figure 9) This would especially be the case if there were a second diacritic below, as in a voiced linguolabial click [l̼]. In addition, some authors, for example Duckworth et al. (1990), use the seagull on labial letters, of which ⟨p̼⟩ has a descender. We therefore feel it is appropriate to request a raised positional variant of ⟨⟨⟩⟩.

There are four additional diacritics below in the Extensions to the IPA for Disordered Speech (extIPA): alveolar U+0347 ̇, weak U+0349 ̈, whistled U+034E ̓ and sliding U+0362 "̼. As noted above, positional variants of these diacritics have the support of both the IPA and the ICPLA.

Finally, the historical IPA turned-omega diacritics, ⟨⟨⟩⟩, and ⟨⟨⟩⟩, are requested. A combining cur- sive-w diacritic – typeset by the IPA as an omega (Figure 15) – was used until 1989 as the IPA symbol for rounding and labialization, prototypically the protruded (endolabial) rounding of [u] and [w]. It is encoded at U+032B COMBINING INVERTED DOUBLE ARCH BELOW, ⟨⟨⟩⟩, and at U+1AC7 COMBINING INVERTED DOUBLE ARCH ABOVE, ⟨⟨⟩⟩, which in some fonts are indeed double arches ⟨⟨⟩⟩ and ⟨⟨⟩⟩.

An extension of this diacritic for the opposite meaning is its graphic inverse, ⟨⟨⟩⟩. This has been used to mean unrounded (Figure 12), but also for the opposite type of the rounding from [w] – that is, as the compressed (exolabial) rounding of [y] and [u], where the lip margins form the opening, contrasting with protruded ⟨⟨⟩⟩, where the inner surfaces form the opening. Back rounded vowels such as [u] and [o] are prototypically endolabial, and front rounded vowels such as [y] and [ø] exo- labial, for example in German and French, but there are exceptions. Thus the Swedish protruded u vowel may be transcribed as [y] and the Japanese compressed u vowel as [u]. When added to a letter with a descender or another diacritic, these may appear over the letter, e.g. ⟨⟨⟩⟩ and ⟨⟨⟩⟩. Martin Ball (p.c. Jan. 2024) notes that ⟨⟨⟩⟩ are being considered for compressed/exolabial in extIPA.

The shape of turned ⟨⟨⟩⟩ should be kept distinct from the ‘seagull,’ U+033C ⟨⟨⟩⟩, which is iconic for the shape of an upper lip; typesetting it as an omega helps in this regard. Note that both ⟨⟨⟩⟩ and ⟨⟨⟩⟩ have the shape of an omega in officially typeset IPA (Figure 12 ff). Some traditions use an angular w, encoded at U+1ABF ⟨⟨⟩⟩ and U+1AC0 ⟨⟨⟩⟩, with the same or similar meanings (Figure 18),
but the rounded forms are the norm. The angular forms ⟨ɔ⟩ and ⟨ɔ⟩ would be misleading in IPA transcription because they recall the IPA letters ⟨w⟩ and ⟨ʍ⟩, which differ from each other in voicing (voiceless [ʍ] being identified as either [w] or [xʷ]) rather than in rounding.

Other historical diacritics, such as the palatal hook above illustrated in L2/24-50 *Letters with palatal hook*, are not requested.

**Combining diacritics**

**IPA positional variants**

- 1AE0 COMBINING LEFT TACK ABOVE. Figures 1–2.
- 1AE1 COMBINING RIGHT TACK ABOVE. Cf. Figure 3.
- 1AE2 COMBINING MINUS SIGN ABOVE. Figures 5–6.
- 1AE3 COMBINING INVERTED BRIDGE ABOVE. Figures 7–8.
- 1AE4 COMBINING SQUARE ABOVE. Figure 7.
- 1AE5 COMBINING SEAGULL ABOVE.

**historical IPA**

- 1AE6 COMBINING DOUBLE ARCH BELOW. Figures 11–12, 13.
- 1AE7 COMBINING DOUBLE ARCH ABOVE. Figure 17.

**extIPA positional variants**

- 1AE8 COMBINING EQUALS SIGN ABOVE.
- 1AE9 COMBINING LEFT ANGLE CENTERED ABOVE.
- 1AEA COMBINING UPWARDS ARROW ABOVE.
- 1AEB COMBINING DOUBLE RIGHTWARDS ARROW ABOVE.

**Properties**

1AE0;COMBINING LEFT TACK ABOVE;Mn;230;NSM;;;;;N;;;;
1AE1;COMBINING RIGHT TACK ABOVE;Mn;230;NSM;;;;;N;;;;
1AE2;COMBINING MINUS SIGN ABOVE;Mn;230;NSM;;;;;N;;;;
1AE3;COMBINING INVERTED BRIDGE ABOVE;Mn;230;NSM;;;;;N;;;
1AE4;COMBINING SQUARE ABOVE;Mn;230;NSM;;;;;N;;;;
1AE5;COMBINING SEAGULL ABOVE;Mn;230;NSM;;;;;N;;;;
1AE6;COMBINING DOUBLE ARCH BELOW;Mn;220;NSM;;;;;N;;;;
1AE7;COMBINING DOUBLE ARCH ABOVE;Mn;230;NSM;;;;;N;;;;
1AE8;COMBINING EQUALS SIGN ABOVE;Mn;230;NSM;;;;;N;;;;
1AE9;COMBINING LEFT ANGLE CENTERED ABOVE;Mn;230;NSM;;;;;N;;;;
1AEA;COMBINING UPWARDS ARROW ABOVE;Mn;230;NSM;;;;;N;;;;
1AEB;COMBINING DOUBLE RIGHTWARDS ARROW ABOVE;Mn;234;NSM;;;;;N;;;;
Linebreaking properties: LineBreak.txt

1AEB COMBINING DOUBLE RIGHTWARDS ARROW ABOVE should have the line breaking property GL. All other characters should have the line-breaking property CM.

Annotations

The Unicode charts should make it clear that the IPA diacritics-above are positional variants, though those characters may have other meanings in non-IPA usage (e.g. U+030A COMBINING RING ABOVE and U+0311 COMBINING INVERTED BREVE ABOVE in orthography, or U+20E1 COMBINING LEFT RIGHT ARROW ABOVE in tensor notation). Per feedback from the SAH, a few annotations should also be added to combining Cyrillic and Coptic characters.

Code numbers in red need to be updated if the proposed code points they refer to are changed.

proposed characters:

1AE0 COMBINING LEFT TACK ABOVE
   • positional variant of U+0318 combining left tack below
     → U+0486 combining cyrillic psili pneumata
     → U+2CF1 coptic combining spiritus lenis

1AE1 COMBINING RIGHT TACK ABOVE
   • positional variant of U+0319 combining right tack below
     → U+0485 combining cyrillic dasia pneumata
     → U+2CF0 coptic combining spiritus asper

1AE2 COMBINING MINUS SIGN ABOVE
   • positional variant of U+0320 combining minus sign below

1AE3 COMBINING INVERTED BRIDGE ABOVE
   • positional variant of U+033A combining inverted bridge below

1AE4 COMBINING SQUARE ABOVE
   • positional variant of U+033B combining square below

1AE5 COMBINING SEAGULL ABOVE
   • positional variant of U+033C combining seagull below

1AE6 COMBINING DOUBLE ARCH BELOW
   = turned omega below
   • positional variant of U+1AE7 combining double arch above
     → U+032B combining inverted double arch below
     → U+033C combining seagull below
1AE7 COMBINING DOUBLE ARCH ABOVE
   = turned omega above
   • positional variant of U+1AE6 combining double arch below
     → U+1AC7 combining inverted double arch above
1AE8 COMBINING EQUALS SIGN ABOVE
   • positional variant of U+0347 combining equals sign below
1AE9 COMBINING LEFT ANGLE CENTERED ABOVE
   • positional variant of U+0349 combining left angle below
     → U+031A combining left angle above
1AEA COMBINING UPWARDS ARROW ABOVE
   • positional variant of U+034E combining upwards arrow below
1AEB COMBINING DOUBLE RIGHTWARDS ARROW ABOVE
   → U+0362 combining double rightwards arrow below is a positional variant

existing characters:
030A COMBINING RING ABOVE
   • may be a positional variant of U+0325 combining ring below
030D COMBINING VERTICAL LINE ABOVE
   • positional variant of U+0329 combining vertical line below
030E COMBINING DOUBLE VERTICAL LINE ABOVE
   • a positional variant of U+0348 combining double vertical line below
0311 COMBINING INVERTED BREVE ABOVE
   • may be a positional variant of U+032F combining inverted breve below
0318 COMBINING LEFT TACK BELOW
   → U+1AE0 combining left tack above is a positional variant
0319 COMBINING RIGHT TACK BELOW
   → U+1AE1 combining right tack above is a positional variant
031C COMBINING LEFT HALF RING BELOW
   → U+0351 combining left half ring above is a positional variant
031D COMBINING UP TACK BELOW
   → U+1DF5 combining up tack above is a positional variant
031E COMBINING DOWN TACK BELOW
   → U+1ADB combining down tack above is a positional variant
031F COMBINING PLUS SIGN BELOW
   → U+1AC8 combining plus sign above is a positional variant
0320 COMBINING MINUS SIGN BELOW
   → U+1AE2 combining minus sign above is a positional variant
0325 COMBINING RING BELOW
   → U+030A combining ring above is a positional variant
0329 COMBINING VERTICAL LINE BELOW
   → U+030D combining vertical line above is a positional variant

032A COMBINING BRIDGE BELOW
   → U+0346 combining bridge above is a positional variant

032B COMBINING INVERTED DOUBLE ARCH BELOW
   = omega below
   → U+1AC7 combining inverted double arch above is a positional variant

032F COMBINING INVERTED BREVE BELOW
   → U+0311 combining inverted above is a positional variant

0339 COMBINING RIGHT HALF RING BELOW
   → U+0357 combining right half ring above is a positional variant

033A COMBINING INVERTED BRIDGE BELOW
   → U+1AE3 combining inverted bridge above is a positional variant

033B COMBINING SQUARE BELOW
   → U+1AE4 combining square above is a positional variant

033C COMBINING SEAGULL BELOW
   → U+1AE5 combining seagull above is a positional variant

0346 COMBINING BRIDGE ABOVE
   = ExtIPA dentolabial
   • may be a positional variant of U+032A combining bridge below

0347 COMBINING EQUALS SIGN BELOW
   → U+1AE8 combining equals sign above is a positional variant

0348 COMBINING DOUBLE VERTICAL LINE BELOW
   → U+030E combining double vertical line above is a positional variant

0349 COMBINING LEFT ANGLE BELOW
   → U+1AE9 combining left angle centered above is a positional variant

034D COMBINING LEFT RIGHT ARROW BELOW
   → U+20E1 combining left right arrow above is a positional variant

034E COMBINING UPWARDS ARROW BELOW
   → U+1AEA combining upwards arrow above is a positional variant

0350 COMBINING RIGHT ARROWHEAD ABOVE
   • may be a positional variant of U+0355 combining right arrowhead below

0351 COMBINING LEFT HALF RING ABOVE
   • may be a positional variant of U+031C combining left half ring below

0354 COMBINING LEFT ARROWHEAD BELOW
   → U+1DFE combining left arrowhead above is a positional variant

0355 COMBINING RIGHT ARROWHEAD BELOW
   → 0350 combining right arrowhead above is a positional variant
0357 COMBINING RIGHT HALF RING ABOVE
  • may be a positional variant of U+0339 combining right half ring below

0362 COMBINING DOUBLE RIGHTWARDS ARROW BELOW
  → U+1AEB combining double rightwards arrow above is a positional variant

0485 COMBINING CYRILLIC DASIA PNEUMATA
  → U+0314 combining reversed comma above
  → U+1AE1 combining right tack above
  → U+2CF0 coptic combining spiritus asper

0486 COMBINING CYRILLIC PSILI PNEUMATA
  → U+0313 combining comma above
  → U+1AE0 combining left tack above
  → U+2CF1 coptic combining spiritus lenis

1AC7 COMBINING INVERTED DOUBLE ARCH ABOVE
  = omega above
  • positional variant of U+032B combining inverted double arch below

1AC8 COMBINING PLUS SIGN ABOVE
  • positional variant of U+031F combining plus sign below

1AC9 COMBINING DOUBLE PLUS SIGN ABOVE
  • positional variant of U+1ACA combining double plus sign below

1ACA COMBINING DOUBLE PLUS SIGN BELOW
  → U+1AC9 combining double plus sign above is a positional variant

1ADB COMBINING DOWN TACK ABOVE
  • may be a positional variant of U+031E combining down tack below

1DF5 COMBINING UP TACK ABOVE
  • may be a positional variant of U+031D combining up tack below

1DFE COMBINING LEFT ARROWHEAD ABOVE
  • may be a positional variant of U+0354 combining left arrowhead below

20E1 COMBINING LEFT RIGHT ARROW ABOVE
  = used in tensor notation
  • may be a positional variant of U+034D combining left right arrow below

2CF0 COPTIC COMBINING SPIRITUS ASPER
  → U+0314 combining reversed comma above
  → U+0485 combining cyrillic dasia pneumata
  → U+1AE1 combining right tack above

2CF1 COPTIC COMBINING SPIRITUS LENIS
  → U+0313 combining comma above
  → U+0486 combining cyrillic psili pneumata
  → U+1AE0 combining left tack above
Core spec

A change is requested to section 7.9 of CoreSpec to clarify that these characters are positional variants. Something along the lines of:

Three IPA diacritics have different meanings when placed above and below the letter: the wedge (\(\ddag\) rising tone vs \(\diamond\) modal-voiced), diaeresis (\(\ddag\) centralized vs \(\diamond\) breathy-voiced) and tilde (\(\ddag\) nasal vs \(\diamond\) creaky-voiced). Otherwise, any IPA diacritic below may be placed above the letter as a positional variant, with the caveat that, in extIPA, bridge-above \(\ddag\) means dentolabial rather than dental as in regular IPA.

This applies to characters in both the Combining Diacritical Marks block and the Extended Combining Diacritical Marks block.
**Chart**

Greyed-out cells have already been assigned or (light grey) are requested in other proposals.

**Combining Diacritical Marks Extended**

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<thead>
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<th></th>
<th>1AB</th>
<th>1AC</th>
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</tr>
</tbody>
</table>
References


Figures

Combining tacks above

Three of the four tacks are attested in the literature. The fourth is an accidental gap.

Figure 1. Canepari (1983: 169). Here the tack has its old IPA value of *retracted*.

Figure 2. Kasatkin (2001: 311, 305). Here again with the old IPA values of retracted (отодвинутый назад).

Figure 3. Olariu et al. (2007: 228). A long right tack indicating a semi-long vowel. This should probably be analyzed as a struck macron rather than as a tack, striking the macron (which indicates a long vowel) to indicate a semi-long vowel.
Combining minus above

The combining minus above is used specifically for retraction, as in post-uvular [q], contrasting with the macron used for length or tone. The double minus (extra-retracted) [ŷ] in Figure 8 is semantically distinct from the extIPA double macron (class-2 occlusion) [β].

Figure 5. Lass (1984: 135). An over-minus indicating retracted articulation. On a vowel such as this, a macron would indicate mid tone. The subscript dot and ogonek-like diacritics are the pre-Kiel convention for raised and lowered articulation.
We refer to these resonance categories as palatalised, clear, half-clear, central, half-dark, dark and velarised. Using C as a symbol for any consonantal symbol we notate them using diacritics thus:

\[ \text{C} \quad \tilde{\text{C}} \quad \hat{\text{C}} \quad \tilde{\text{C}} \quad \tilde{\text{C}} \quad \hat{\text{C}} \quad \tilde{\text{C}} \quad \hat{\text{C}} \quad \text{e} \quad \hat{\text{e}} \]

Figure 7. Kelley & Local (1989: 73). Combining ⟨ə⟩ with the minus-below necessarily moved above the letter. The combining schwa will be requested separately.

Figure 8. Kelly & Local (1989: 219). Single and double minus above, for backed [ɟ] and more backed [ӟ]. Vowels without descenders are transcribed with minus below: ⟨e, ẹ⟩ etc.

Combining bridge and square above


Znak [č], ktorý (s rovnakou platnosťou ako u nás) nájdeme aj v mnohých amerických slovníkoch, môžeme definovať ako tesnú realizáciu hlášok [t] a [s], ktoré sú v IPA reprezentované symbolmi [t] a [ʃ]. Uvedená afrikáta sa realizuje apikálne, a preto ju budeme v IPA transkribovať ako [ʃ].

Figure 9. Pavlík (2004: 103–104). Contrast of apical [ʃ, ʒ] and laminal [ʃ, ʒ]. The equivalence of [t] and [ʃ] shows that the diacritics above and below are synonymous. Translation:

The sounds [š] and [ž] are identifiable in IPA by the intersection of fricative and postalveolarity. In Slovak, these sounds are articulated apically and we will transcribe them as [ʃ] and [ʒ]. In some languages, e.g. in English, the phonemes /ʃ, ʒ/ can also be realized laminally — [ʃ, ʒ]...

The letter [č], which (with the same value as in our country) can also be found in many American dictionaries, can be defined as a close realization of the sounds [t] and [s], which are represented by the symbols [t] and [ʃ] in the IPA. The mentioned affricate is realized apically, and therefore we will transcribe it in IPA as [ʃ].
<table>
<thead>
<tr>
<th></th>
<th>Bilabiál/y</th>
<th>Labio-dentály</th>
<th>Alveoláry</th>
<th>Postal-veláry</th>
<th>Palatály</th>
<th>Veláry</th>
<th>Glotály</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explozívy</strong></td>
<td>p</td>
<td>b</td>
<td></td>
<td></td>
<td>c</td>
<td>j</td>
<td>k</td>
</tr>
<tr>
<td><strong>Nazály</strong></td>
<td>m</td>
<td>m̊</td>
<td></td>
<td></td>
<td>j̊</td>
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<td>n̊</td>
</tr>
<tr>
<td><strong>Vibranty</strong></td>
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<td>j̊</td>
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<tr>
<td><strong>Jednokmitové hlásky</strong></td>
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<tr>
<td><strong>Frikatívy</strong></td>
<td>f</td>
<td>v</td>
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<td>j̊</td>
<td>x</td>
<td>y</td>
<td>h</td>
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<tr>
<td>Afrikáty</td>
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<td></td>
<td></td>
<td></td>
<td>i̊</td>
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</tr>
<tr>
<td><strong>Centrálné aproximanty</strong></td>
<td>w</td>
<td>u</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Laterálné aproximanty</strong></td>
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</tr>
</tbody>
</table>

Tab. 3. Tabuľka slovenských spoluhlások v transkripcii IPA.

Figure 10. Pavlík (2004: 107). Legend: *Table of Slovak consonants in IPA transcription*. Note the subscripts-above ⟨⟨◌⟩⟩ (blue) and ⟨⟨◌, ◌⟩⟩ (red).

**Combining turned omega (double arch)**

Figure 11. Shuken (1980: 34). ⟨⟨◌⟩⟩ is used for labialized and turned ⟨⟨◌˛⟩⟩ for the opposite. This is the same usage as in the next figure.
13. Labialization and Unrounding

For labialization (lip-rounding) the sign $[\omega]$ under the letter, e.g. $[u, o]$, was recommended: it recalls the letter $w$.

The same sign may exceptionally be applied to a vowel-

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letter, though in most cases the rounded vowels have separate alphabetical signs.

For unrounding of rounded vowels the inverse sign $[\omega]$ may be used, e.g. $[u]$

Figure 12. Jespersen & Pedersen (1926: 18–19). $\langle \omega \rangle$ “recalls the letter $w$.” The turned omega $\langle \omega \rangle$ is graphically distinct from the seagull for linguo-labial, U+033C $\langle \omega \rangle$, which is iconic for the shape of the upper lip.

Figure 13. de Angulo & D. J. (1937: 69, 70). $\langle \omega \rangle$ for labialization has an omega shape in other early material. It is even set in italic typeface, as Greek script typically was at the time.

Figure 14. Bailey (1985: xxi, 58, 112). A later example of an omega shape in a publication not from the IPA. Associated notes explain that adding $\langle \omega \rangle$ to a rounded segment indicates “over-rounding,” a term sometimes used to distinguish exolabial and endolabial.
Figure 15. International Phonetic Association (1999: 173). An omega shape is retained in the IPA Handbook, and is identified with U+032B COMBINING INVERTED DOUBLE ARCH BELOW. The symbol “420” that it was superseded by is U+02B7 MODIFIER LETTER SMALL W.

Figure 16. Smith-Stark (2005: 19). This “omega-shaped diacritic” is presumably to be encoded as U+1AC7 ⟨◌⟩.

Figure 17. Catford (1972: 679). ⟨◌⟩ on letters with descenders in [g], [q] and [χ].
Figure 18. Kelly & Local (1989: 154). The print forms of the labialization diacritics, U+1ABF ⟨◌ᵩ⟩ and U+1AC0 ⟨◌ž⟩, for “outer” and “inner” lip-rounding (endolabial and exolabial, respectively). Angular ⟨◌ᵩ⟩ is a distinct character from the U+032B ⟨◌⟩ of official IPA, though in handwriting both approach a double arch ⟨◌₉⟩.
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.

A. Administrative

1. Title: IPA diacritics above and one below

2. Requester’s name: Kirk Miller

3. Requester type (Member body/Liaison/Individual contribution): individual

4. Submission date: 2024 March 31

5. Requester’s reference (if applicable): 

6. Choose one of the following: 
   (or) More information will be provided later: 
   yes

B. Technical – General

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

2. Number of characters in proposal: 12

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 E-Minor extinct 
   D-Attested 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? Kirk Miller
   b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): SIL (Gentium Release)

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

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 www.unicode.org for such information on other scripts. Also see Unicode Character Database (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

1. Has this proposal for addition of character(s) been submitted before?  
   **If YES** explain __________.  
   **If NO** ________.

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.)?  
   **If YES, with whom?** International Phonetic Association, International Clinical Phonetics and Linguistics Association  
   **If YES, available relevant documents:** __________.  
   **If YES, with whom?** __________.  
   **If YES, available relevant documents:** __________.

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?  
   **Reference:** __________.

4. The context of use for the proposed characters (type of use; common or rare)  
   **Reference:** __________.

5. Are the proposed characters in current use by the user community?  
   **Reference:** see illustrations  
   **If YES, where?** __________.

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?  
   **If YES, is a rationale provided?** __________.  
   **If YES, reference:** __________.

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?  
   **If possible** ________.

8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?  
   **If YES, is a rationale for its inclusion provided?** __________.  
   **If YES, reference:** __________.

9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?  
   **If YES, is a rationale for its inclusion provided?** __________.  
   **If YES, reference:** __________.

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?  
    **If YES, is a rationale for its inclusion provided?** __________.  
    **If YES, reference:** __________.

11. Does the proposal include use of combining characters and/or use of composite sequences?  
    **If YES, is a rationale for such use provided?** __________.  
    **If YES, reference:** __________.  
    **Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?** __________.

12. Does the proposal contain characters with any special properties such as control function or similar semantics?  
    **If YES, describe in detail (include attachment if necessary)** __________.

13. Does the proposal contain any Ideographic compatibility characters?  
    **If YES, are the equivalent corresponding unified ideographic characters identified?** __________.  
    **If YES, reference:** __________.