Title: **Proposal to add two Tifinagh characters for vowels in Tuareg language variants**
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This document proposes two additional characters to be added to the UCS for Tifinagh (U+2D30-U+2D7F) with suggested names "TIFINAGH LETTER YE" and "TIFINAGH LETTER YO", corresponding to the Tuareg long vowels 'e' and 'o' respectively. See figures 1 and 2 for suggested representative glyphs.

Figure 1 - TIFINAGH LETTER YE

Figure 2 - TIFINAGH LETTER YO

They have been used in publications by the UNESCO-sponsored "Association pour la promotion des tifinagh" (APT) based in Agadez, Niger, from around 2004 to at least 2007.
APT's projects included publishing poetry, proverbs, an illustrated lexicon, a writing guide, and a newspaper called "Amanar" sold around villages. The APT also supports the teaching of vowelled Tifinagh and training of the newspaper's editorial team.

Figure 3, an extract from a book of poetry, shows examples of each letter, with and without a stress marker (in APT use, a circumflex accent is used as diacritic).

Unicode character properties:

These characters have the same properties as existing ordinary Tifinagh characters.
TIFINAGH LETTER YE;Lo;0;L;;;;;N;;;;;
TIFINAGH LETTER YO;Lo;0;L;;;;;N;;;;;

Figure 3 (TIFINAGH LETTER YE '<' and YO '--', Tišiway n Ayər, APT Agadez 2006 p. 20)

Proposal to add two Tifinagh characters - Paul Anderson

Background – Tifinagh addition to the UCS, and current status

When the Tifinagh letters were first added to the UCS, the vowelled neo-Tifinagh repertoire developed by Morocco's IRCAM for Moroccan variants of Northern Berber was used as the base. The Tifinagh script was declared the official script for these variants in Morocco.
The IRCAM letters were called simply "TIFINAGH LETTER X" where X corresponds to the sound represented by the letter.
Other attested neo-Tifinagh, for example from the Academie Berbère, extended IRCAM letters, and Tuareg Tifinagh were given simple names too, where they extended the basic set without duplication of sound, for example U+2D36 TIFINAGH LETTER YAJ, U+2D32 TIFINAGH LETTER YABH. These letters were not needed by IRCAM in the basic set either because a different orthographic convention is used to represent these sounds in Morocco (digraphs), or because the sounds are considered to be dialectal or foreign variants and are written by convention with a different letter.

Then, other attested neo-Tifinagh and Tuareg variant letters were added, with names such as U+2D4C TIFINAGH LETTER TUAREG YAZH.

The result is an odd mix:
There is a set of "TIFINAGH LETTER X" letters forming a notional unmarked "Tifinagh alphabet". This set covers the letters theoretically required for Northern Berber, both in Morocco and in Algeria, even when the language variants are written phonetically (no longer standard practice), and when dj and tch are each written with single letters, as in Algeria. It also has theoretical cover for all Tuareg language variants, but only when these are written without vowels, the classical way.
In addition to this unmarked set, there are many variant letters named "TIFINAGH LETTER <SOURCE> X" according to their source. Some of these letters represent different sounds when used to write different Tuareg language variants.
The vowels used in Tuareg but not in Northern Berber have no corresponding characters in the UCS, because at the time there was a lack of clarity and concensus about writing them.

Although the unmarked set covers the theoretical requirements for Northern Berber language variants, only the IRCAM alphabet uses letters from the "TIFINAGH LETTER X" set exclusively. For Algeria, most of the commonly-used letters come from this set, some others are available as Academie Berbère variants, but other variants are not yet in the UCS.
For Tuareg, though the unmarked set covers the theoretical requirements for writing Tuareg, each regional language variant uses a different mix of unmarked letters and Tuareg variant letters, and some regional letters are lacking. Only writing in classical unvowelled style is supported, and this requires font support for mandatory ligatures – no font is yet known to support all of the ones needed. Also, the ligatures need to be defined correctly for all combinations of regional variant letters, assuming that this is possible.

Having Tuareg share letters with neo-Tifinagh has some unfortunate consequences. Contextual shaping works differently for combinations of the letters TIFINAGH LETTER YAL and TIFINAGH LETTER YAN when writing neo-Tifinagh and when writing Tuareg (and even differs between APT and SIL Tuareg!). The neo-Tifinagh glyphs and Tuareg glyphs are also different for these letters. For the vowels YA and YU, Tuareg does not have the innovation of distinguishing the letters from punctuation with hollow dots.

Justification

APT's vowelling system is phonologically complete and requires only two letters to be added to the UCS. Vowels shared with Northern Berber can be written in the same way as IRCAM – TIFINAGH LETTERs YA,YU,YI and YEY, and short 'a' is written simply as TIFINAGH LETTER YA plus COMBINING BREVE. If Tuareg Tifinagh vowelling catches on, APT's system is technically well placed. The idea to add the two new characters has been verified with Dr. Maarten Kossmann, University of Leiden.

There are other existing Tuareg vowelling solutions (mentioned or outlined in the original Tifinagh proposal). These are all inconsistent with IRCAM's Northern vowelling, and generally work by adding diacritics to two or three base letters (the base letters are generally those representing a and the semivowels w and y, or schwa), or adding vowel marks to consonants.

APT appear to have modified their characters that represent the "i" and "u" vowels in order to obtain letters for "e" and "o" respectively. Basing the new letters on these vowels and their corresponding semivowels maintains a link to the classical system of writing Tifinagh. The other solutions achieve the same thing by using diacritics.

The only system that has a standalone letter (with no diacritic) for 'e', that could be a contender to be "TIFINAGH LETTER YE" is Rissa Ixa's. His letter looks like "÷" and could be written as TIFINAGH LETTER YEY.
No other system has a competing standalone 'o' letter for "TIFINAGH LETTER YO".

Most, if not all, of the other systems are phonologically incomplete in some way (Rissa Ixa's, for example, has no schwa and no 'o'), and all have limited use.

Implications

Whether the Tifinagh script is unified in future in view of the background section above, or continues to collect new letter variants, there is still a need to add the two new characters "TIFINAGH LETTER YE" and "TIFINAGH LETTER YO" for writing vowelled APT Tuareg. The names put the characters in the unmarked set, which covers both eventualities.

If the script is unified, they remain standard letters, and APT Tuareg can already be written, with an appropriate font to give an APT appearance to some of the letters where necessary.

If the Tifinagh script is instead to gain extra characters in future, the remaining variant letters (vowels and consonants) from the APT repertoire will need to be added later to the UCS to complete the APT letter repertoire and allow APT Tuareg to be written. (APT's consonants represent a compromise between Aïr and Azawagh Tuareg usage in Niger).

Adding the two characters would not cause any difficulty for adding the necessary characters for other Tuareg neo-Tifinagh vowel systems in future. For example, Rissa Ixa's system has a standalone letter for short 'a' (no diacritic, unlike the other systems). Required base letters for diacritics could also be added to the UCS. That would not even be necessary if the script were to be unified and the existing letters TIFINAGH LETTERs YA,YU,YI or YEY were given the necessary visual forms to become base letters by using an appropriate font.

References

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[2] Morocco-Canada-France (prepared by P. Andries) - Proposal to add the Tifinagh Script, n2739.pdf (Unicode proposal)

[3] Naïma LOUALI, LES VOYELLES TOUAREGUES ET L'ALPHABET TIFINAGH : EVALUATION DE QUELQUES PROPOSITIONS RECENTES, PHOLIA (Laboratoire de Phonétique et Linguistique Africaine) Volume 8, 1993