

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

Please fill all the sections A, B and C below.  
Please read Principles and Procedures Document (P & P) from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.  
Please ensure you are using the latest Form from <http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.  
See also <http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

**A. Administrative**

1. Title: **Proposal to add two Tifinagh characters for vowels in Tuareg language variants**

2. Requester's name: **Paul Anderson**

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

4. Submission date: **30<sup>th</sup> July 2010**

5. Requester's reference (if applicable):

6. Choose one of the following:

This is a complete proposal: **Yes**

(or) More information will be provided later:

**B. Technical – General**

1. Choose one of the following:

a. This proposal is for a new script (set of characters): **No**  
Proposed name of script:

b. The proposal is for addition of character(s) to an existing block: **Yes**  
Name of the existing block: **Tifinagh. See also L2/10-096**

2. Number of characters in proposal: **2**

3. Proposed category (select one from below - see section 2.2 of P&P document):

A-Contemporary  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?  
**The Unicode Consortium, who will be printing the charts, has indicated that they already have a valid license for a font that contains glyphs for these characters. Ref, editors Rick McGowan and Michael Everson.**

b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

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**  
*See section D4*

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> for such information on other scripts. Also see <http://www.unicode.org/Public/UNIDATA/UCD.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

<sup>1</sup> Form number: N3702-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11)

### C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain		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? If YES, available relevant documents:	 <i>See section F</i> 	Yes
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	 <i>See section D3</i>	Yes
4. The context of use for the proposed characters (type of use; common or rare) Reference:	 <i>See section D3</i>	common
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	 <i>See section D3</i>	Yes
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:	  <i>Common characters, and should be kept with Tifinagh block</i>	Yes Yes
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?		Optional
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:	  	No
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:	  	No
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	  	No
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? If YES, reference:	   <i>See section D5</i>  <i>See section D5</i>	Yes Yes Yes
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)	  	No
13. Does the proposal contain any Ideographic compatibility character(s)? If YES, is the equivalent corresponding unified ideographic character(s) identified? If YES, reference:	  	No

## D1 Proposed characters

	2D6	
6	 2D66	TIFINAGH LETTER YE
7	 2D67	TIFINAGH LETTER YO

The character shapes shown above are those from the publications (1) of the Association for the Promotion of Tifinagh (=APT) in Niger.

The *Hapax Berbère* Tifinagh reference font already contains representations of the characters in the Private Use Area at U+E00C and U+E03C respectively, where they appear rounded unlike the APT's forms, matching the other Tifinagh letters in the Hapax font:



The characters are named TIFINAGH LETTER <x> without further specification because they are consistent with the existing IRCAM set and could be used generally for writing Berber language variants that contain long 'e' and 'o' vowels.

## D2 Unicode character properties

These characters have the same properties as existing ordinary Tifinagh characters.

2D66;TIFINAGH LETTER YE;Lo;0;L;;;;;N;;;;;

2D67;TIFINAGH LETTER YO;Lo;0;L;;;;;N;;;;;

## D3 User population, script usage and examples

According to UNESCO, two-thirds of the estimated 1.5 million Tuareg living in Niger use the Tamajaq language on a daily basis. The Tifinagh script is still handed down the generations and is a symbol of ethnic identity, but it is rarely used in Niger. From 2003 to 2006, UNESCO (led by UNESCO Paris) assisted the Association for the Promotion of Tifinagh (APT) in Agadez, Niger in the publication of a journal, "Amanar", teaching materials, and several booklets (1) devoted to oral traditions and expressions. Five hundred copies of each of the booklets were distributed in village libraries and schools, and the journal was sold in the Tuareg communities of northern Niger. Classes organized in 2003 taught approximately two thousand Tuareg the script.

Literacy rates in any script and IT use are low in Niger.

The proposed characters "TIFINAGH LETTER YE" and "TIFINAGH LETTER YO" taken from APT usage correspond to the Tuareg long vowels 'e' and 'o' respectively. They could be used to write the same 'e' and 'o' of other Berber language variants elsewhere.

## Proposal to add two Tifinagh characters for vowels in Tuareg language variants

Tuareg vowels can be stressed in certain verb forms, and where this distinction is important in writing, a diacritic is written above the vowel. This applies to vowels generally, not only YE and YO. In current APT usage, a circumflex accent is used as the diacritic.

Figure 1, an extract from a book of poetry published by the APT, shows examples of each of the two proposed letters in APT usage, with and without a stress marker. For other examples, see the APT's booklets (1), which are typeset identically to figure 1.

The APT Tifinagh system falls between traditional and neo-Tifinagh. It is traditional in that the repertoire has been rationalised from available traditional letters (a compromise between Aïr and Azawagh Tuareg), context-dependent leaning of 'YAL' and 'YAN' letters has been retained, and there are no IRCAM-style practical innovations such as hollow dots for vowel letters and linked constituent lines for letters such as 'YAL', 'YAN' and 'YAF'. The system is novel (neo-Tifinagh) in that traditional biconsonant ligatures are absent, and new vowel letters, and a 'dot below' to indicate 'emphatic' consonants, have been introduced. Traditionally, vowels were not marked, or only certain vowels and in some positions, and 'emphatic' consonants in Niger are relatively infrequent compared to in other regions and so the traditional repertoires seem to have lacked signs for them.

To write APT Tifinagh exactly, not just adopting its extended vowel system, would require additional new letter forms, either from encoding further Tifinagh in Unicode or by font rendering of existing characters.

Other systems exist for Tuareg vowels in Tifinagh – see section E. One such system is that used by SIL. Although SIL's vowel system differs from APT's, SIL has endorsed this proposal (5). See section E for further details.

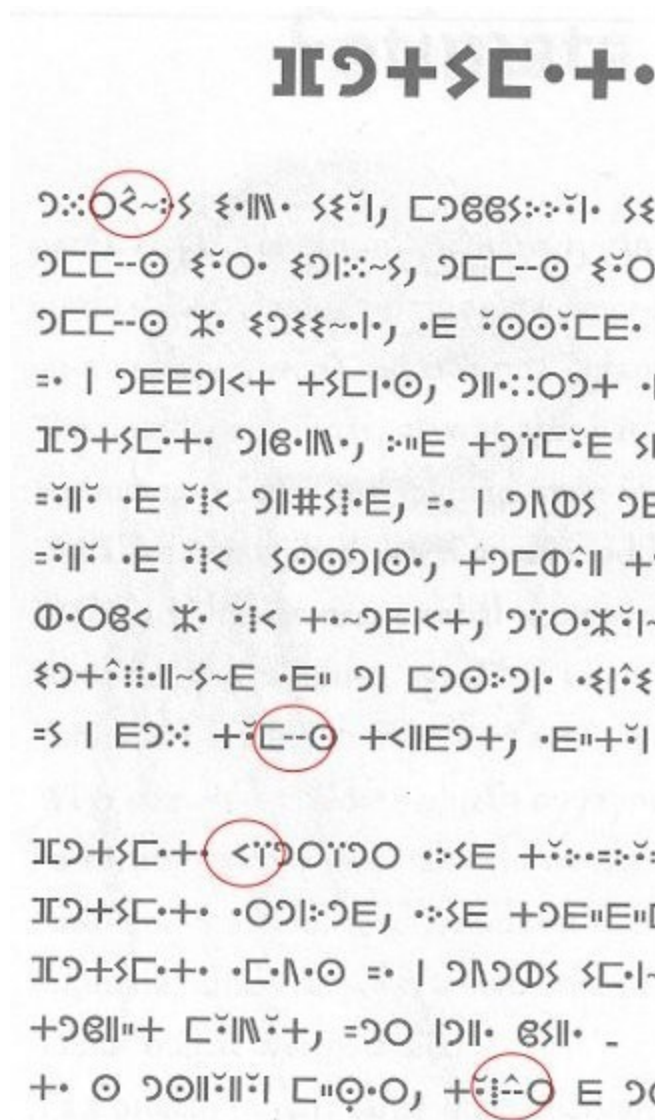


Figure 1 (TIFINAGH LETTER YE '◌' and YO '◌', Tišiway n Ayər, APT Agadez 2006 p. 20)

#### D4 Collating order

The original Tifinagh proposal document (2) gives IRCAM's order as the only defined model, but the IRCAM alphabet does not contain YE and YO (the driving force having been Northern Berber in Morocco, not Tuareg).

APT Niger's alphabet does contain YE and YO but it is listed in a different order to IRCAM's at the start of, and on the back cover of, each of APT's publications. The order (which follows equivalent Latin script order) is probably arbitrary - used because the official script in Niger for Tuareg is Latin - and not formal. If it became formalized in future, the APT is active in the Agadez region of Niger so their collation order would presumably apply to the appropriate locale, not globally for the script.

The two new letters should however have a reasoned position in the primary collating order, not only for APT's locale, because they extend the Tifinagh script to allow vowelised writing of Tuareg language variants generally.

Their collating position should not simply follow code point order, because there is a similarity relationship for grouping purposes that follows rule 9 under "Criteria for Addition of Small Numbers of Characters to

#### Proposal to add two Tifinagh characters for vowels in Tuareg language variants

Existing Collections" (<http://www.unicode.org/collation/ducet-criteria.html>):

The letters shapes for YE and YO appear to be derived from APT's letters corresponding to YI and YU, respectively. (YE is a fragment of an APT 'i', and YO is a rotated flattened APT 'u').

For the collation of the two new characters, this proposal therefore suggests YI<YE and YU<YO. The author will check with APT that this interpretation is correct and with IRCAM to see if the characters' positions are consistent with IRCAM's ordering logic. Since the IRCAM order *partially* follows Latin alphabetical order, alternatives would be YE<YI, YO<YU (grouping the related letters together but following Latin order rather than derivation order), or other placements that follow IRCAM's logic but would separate the related letters.

## D5 Combining characters, and composite sequences

### Stress and vowel length

In existing APT Niger practice, a circumflex is used (where needed to avoid confusion) to mark stressed vowels, dating from when the stressed vowel was treated as a different 'extra long' type of vowel. The modern linguistic consensus seems to be that such vowel lengthening represents stress, occurring along with other changes such as pitch and emphasis, and that this stress can occur at least for the long vowels - 'YA', 'YI', 'YU', 'YE' and 'YO'. (An acute accent instead of a circumflex might therefore make more sense, to reflect stress rather than implying a different longer type of vowel, especially if the accent can fall on short vowels too - in APT usage for short 'a' the 'YA' already carries a breve diacritic).

According to Jeffrey Heath's Grammar of Tamashek (Tuareg of Mali), p.82, (3) there are many verbs whose perfective positive stems and resultative stems differ only in accent.

### Composite sequence summary

TIFINAGH LETTER YE + COMBINING CIRCUMFLEX	< + ◌̂	◌̂	Stressed 'e'
TIFINAGH LETTER YO + COMBINING CIRCUMFLEX	-- + ◌̂	◌̂	Stressed 'o'

- Using the APT-style vowel system requires a combining circumflex or acute accent with other vowels too.
- These composite glyphs are available in the *Hapax Berbère* Tifinagh reference font PUA at positions U+E212, U+E214.
- Writing emphatic consonants in the APT style uses consonants with COMBINING DOT BELOW. The APT alphabet lacks dedicated letters for emphatics.

## E Other Tuareg Tifinagh vowel systems

The APT system builds upon IRCAM's vowel system while remaining consistent with it, unlike alternative Tuareg Tifinagh vowel systems. It requires only the addition of the two characters proposed, plus the use of combining diacritics as described above.

Encoding these two new vowel characters would not prevent encoding of other Tifinagh vowel systems for Tuareg in future, should this be required. The only other 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 (4). 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". Also, adding characters to achieve other vowel systems could be avoided by using diacritics and/or unusual font rendering of the systems' existing base letters - generally semivowels or YEY (schwa).

## Proposal to add two Tifinagh characters for vowels in Tuareg language variants

Any of the vowel systems could be used for writing other Tuareg variants outside the region where they were developed, but most of them, unlike APT's, are not phonologically complete (4). No Tuareg Tifinagh vowel system can yet claim general use. The systems are all sketched out in (2), but when the Tifinagh script was first proposed for Unicode the situation was judged unclear and further work on them was deferred.

SIL has endorsed this proposal (5), despite using a different vowel system, because the resulting Unicode encoding is consistent with the SIL system and indeed would already enable it to be written in Unicode.

## **F Acknowledgements**

Background about Berber phonology and orthographies came from Lameen Souag at SOAS, Dr. Maarten Kossmann at Leiden University, and from Christfried Naumann (Leipzig University, Institute of African Studies) regarding Siwi. Dr. Kossmann also provided specific feedback on adding further Tifinagh characters to Unicode. Patrick Andries and Lorna Priest, both previous contributors to Tifinagh in Unicode, gave feedback on the preliminary proposal. Amessalamine Ahmed, permanent secretary of the APT, may be able to provide further support, and UNESCO also provided two email contacts for the APT. Mr. Youssef Ait Ouguengay of IRCAM's IT department was very encouraging of further development of Tifinagh consistent with IRCAM's work.

## **G References**

[1] APT in collaboration with UNESCO, Agadez, Niger

- Tišway n Ayer – Poèmes touaregs de l'Aïr, 2006

- Guide de lecture et d'écriture en tifinagh vocalisées, 2004

- Almufassir wa n šaššalan tamajaq-təfrənsist – Lexique illustré tamajaq-français, 2006

- Contes, proverbes et devinettes touaregs

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

[3] Heath, Jeffrey, 2005 A Grammar of Tamashek (Tuareg of Mali). Mouton de Gruyter.

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

[5] Lorna A. Priest, Jon Coblenz (SIL International) - Unicode internal document L2/10-147