A universal Amazigh keyboard for Latin script and Tifinagh

Paul Anderson
p_j_anderson@volny.cz

Clavier Amazighe universel (tifinaghe/latin)

The project has distilled the myriad keyboard requirements for a broad range of Amazigh language variants and orthographies into a single layout for Latin script and a single layout for Tifinagh.

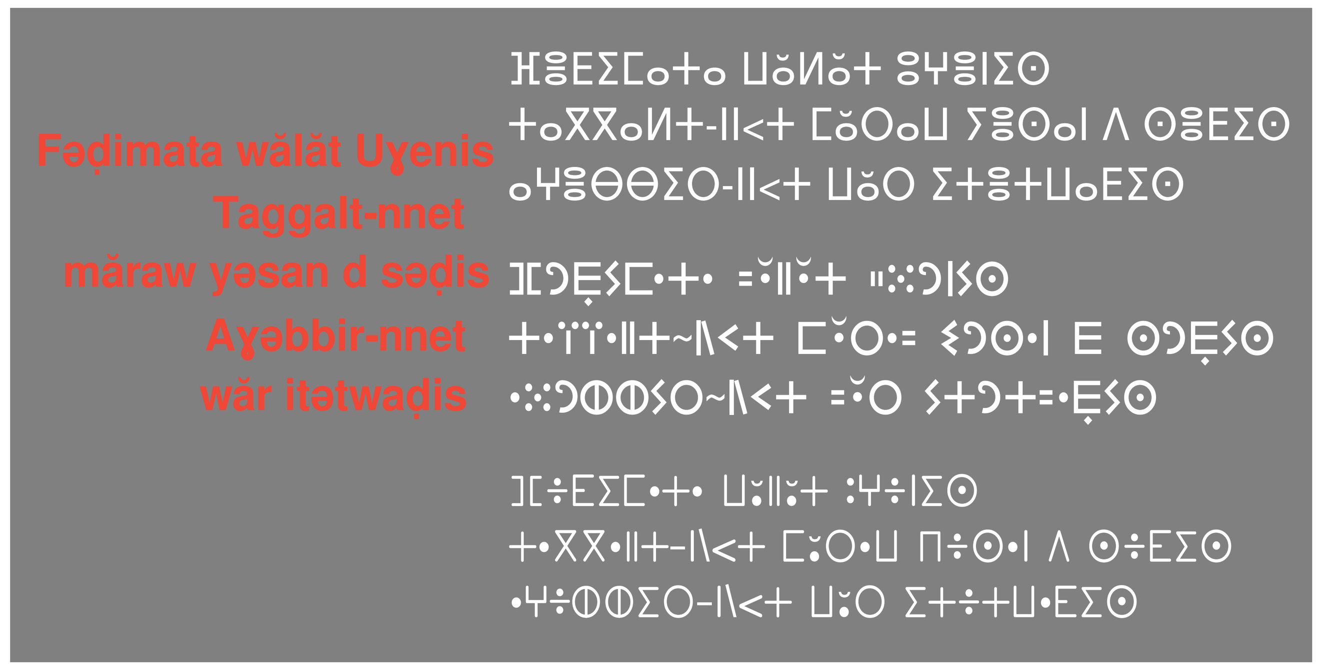
Considering a range of language variants together meant:

- they all benefit from a coherent solution
- keyboard drivers provide for a wider range of users, who might be visiting from a different region
- users are free to experiment with unfamiliar language variants and orthographies, for example learning Tifinagh for converged Moroccan Amazigh.

Encoding Tifinagh[1] by means of equivalent (usually Ircam) letters rather than by visual appearance meant:

- a single keyboard layout was possible
- Tifinagh repertoires that could not previously be represented in Unicode now can be, even vowelled Tuareg, for example the repertoire of the Association for the Promotion of Tifinagh (APT), Agadez, Niger [2]
- each Tifinagh font allocates letter forms and orthographic features to a shared set of letters, simplifying consistent font design while liberating the choice of visual forms. The default letter forms are Ircam's (so Ircam's fonts remain compatible), plus other letters that conform to Ircam's standards.

Design took into account future developments such as standards compliance.



METHOD

The project targeted everyday typing of Northern Amazigh in Latin script across Morocco and Algeria, and typing as many major Amazigh variants as possible in Tifinagh. Prioritisation of Amazigh variants was by level of representation in modern Amazigh literature in Latin script or Tifinagh. Arabic script was judged out of scope.

The ideal was a single arrangement per script sufficient for typing all targeted Amazigh variants, and intuitive enough to be preferred for that script by users.

The combined features of all the orthographies, with Latin script and Tifinagh examined side-by-side, were analysed for practical representation of the phonology (and to some extent phonetics) across the language variants. A variety of examples of everyday printed materials were studied. The features were then mapped to Unicode and allocated by priority to the keyboard layouts.

Two Tifinagh letters, necessary for Tuareg vowels, that were presented but deferred in the original Tifinagh Unicode proposal[3] were proposed [4], and accepted into the encoding process by the Unicode consortium.

Layouts were created for Microsoft Windows using Microsoft Keyboard Layout Creator (MSKLC). Suitable prototype fonts were used to check that font technology was adequate to style text correctly. Unicode handling was checked in several text editing applications on various versions of Windows. Users gave feedback on usability.

RESULTS

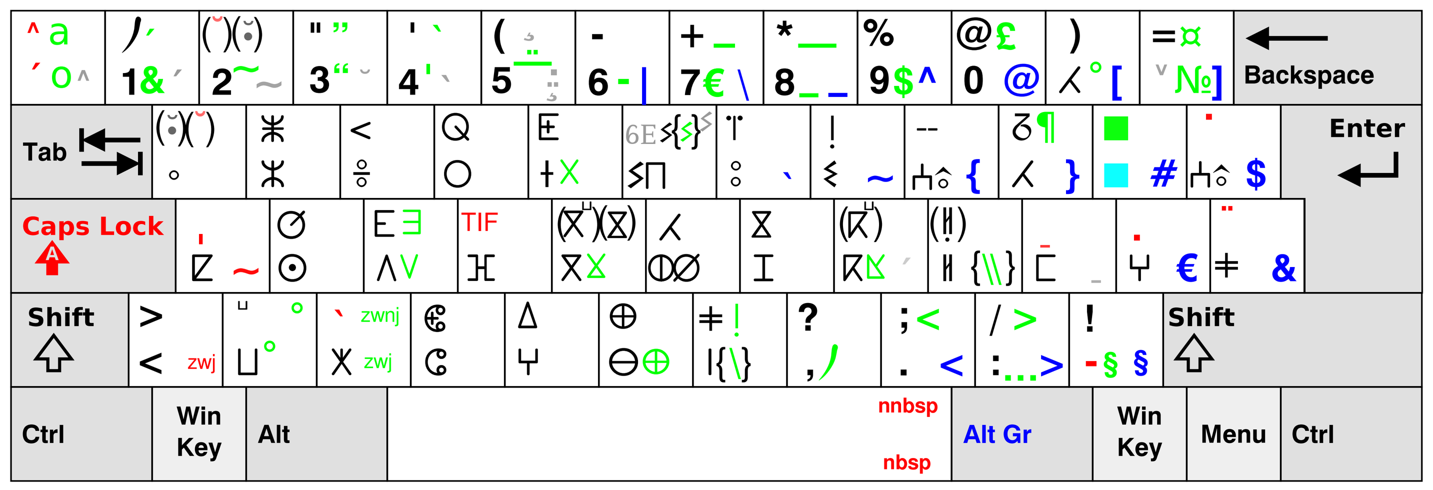
The AZERTY Amazigh-centric layout and its QWERTY adaptation were produced for North Africa, with other adaptations for Amazigh communities worldwide. An Amazigh/French bilingual AZERTY version was also created as a helpful utility. Layouts were designed to be implemented across various computing platforms.

Language variants supported include Moroccan Tarifit, Central Moroccan Tamazight, Tachelhit, and converged Amazigh; Algerian Tacenwit, Kabyle and Chaoui; and Tuareg variants. Others were given preliminary support subject to future verification - for example Mozabite, and Siwi for transcription. Detailed assessment of the remainder was left to future work.

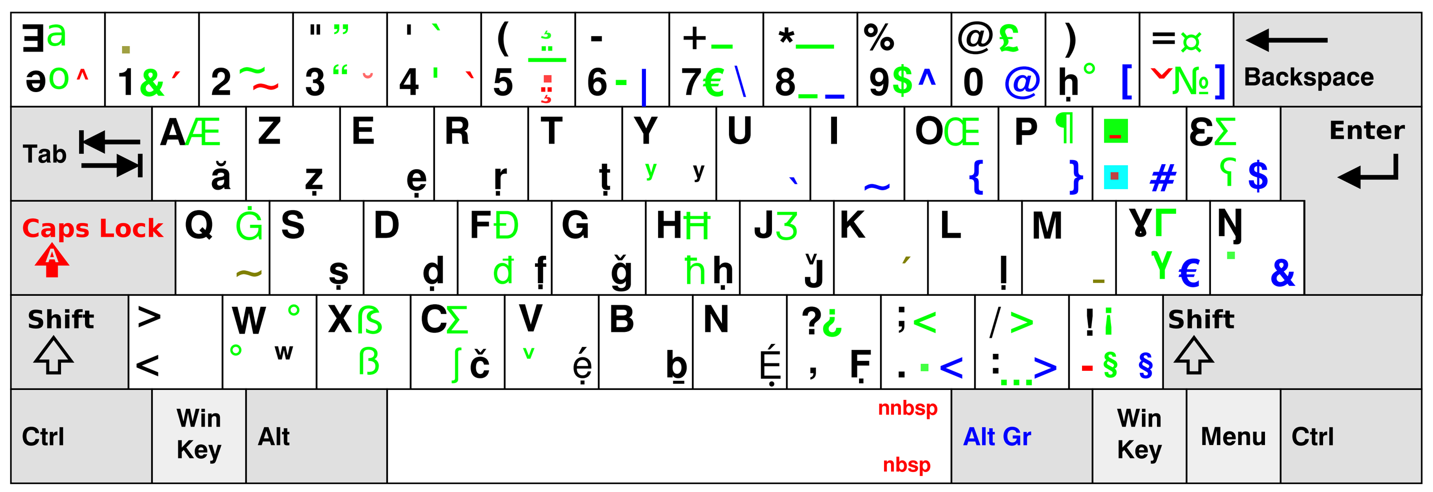
Because of the multilingual context of Amazigh language use, the Latin script layout has provisional facilities for typing a range of non-Amazigh European and West African national languages and for transcribing Darja Arabic.

Caps Lock switches between scripts. The Tifinagh layout is compatible with Ircam's as an established standard. The Latin layout duplicates some functions in positions familiar to users of other Amazigh keyboards, and also provides obsolete features, to encourage users to start using the project's layouts.

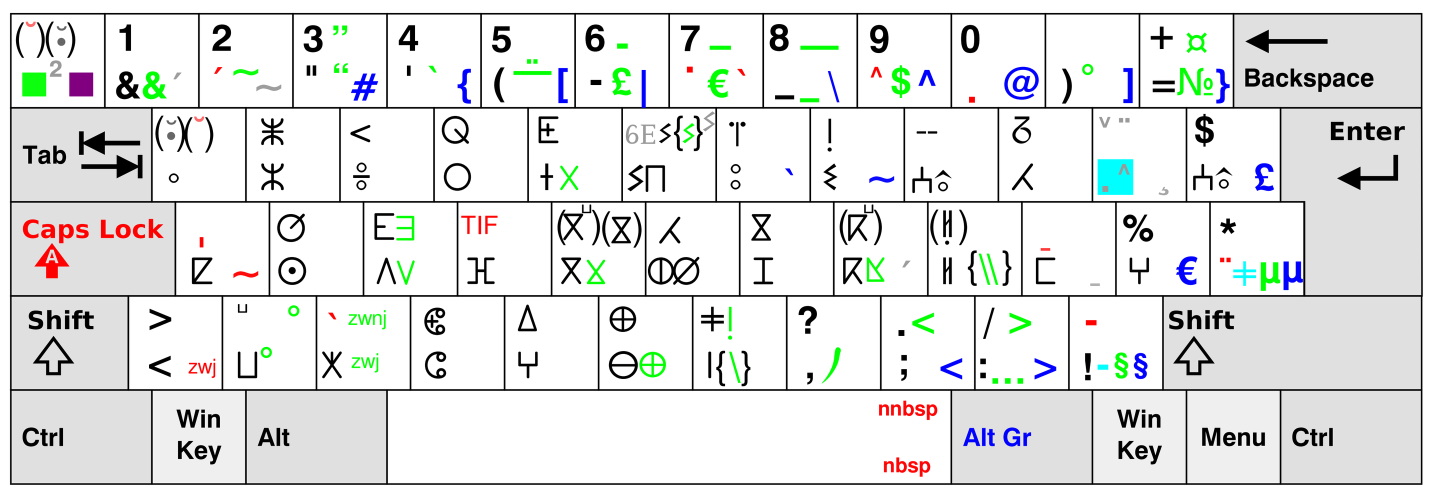
Vowelled Tuareg Tifinagh is a primary function, though typing classical Tuareg Tifinagh with ligatures and limited vowel marking is also possible. West African-style Latin orthographies for Tuareg are a secondary function because they are supported by national governments.



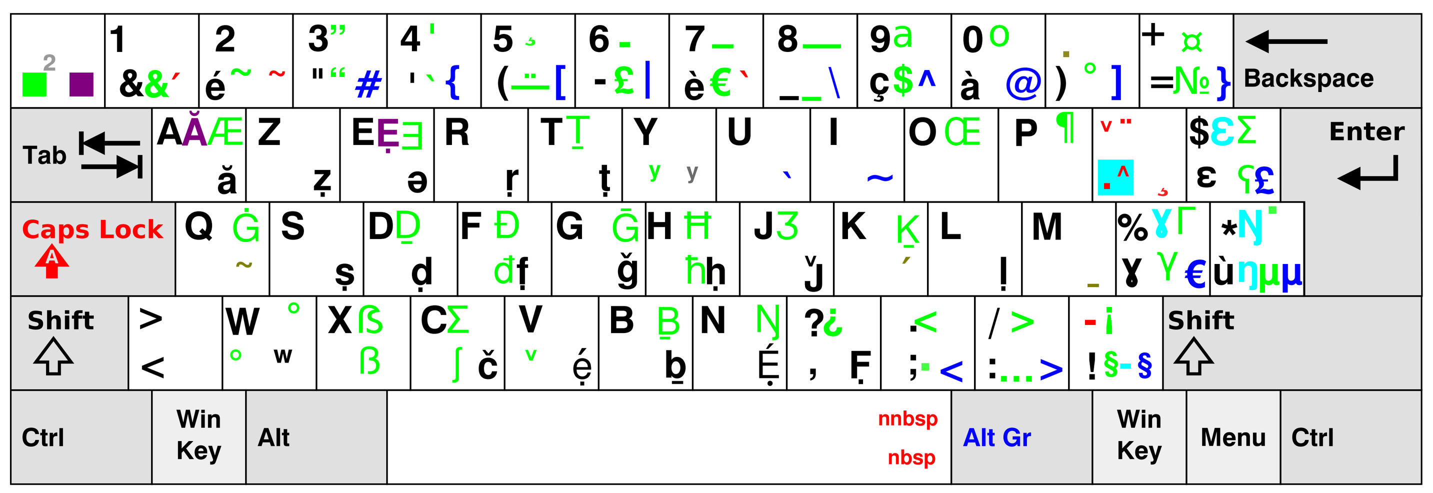
Amazigh-centric layout - Tifinagh



Amazigh-centric layout - Latin (not all functions shown)



Bilingual Amazigh/French layout - Tifinagh



Bilingual Amazigh/French layout - Latin (not all functions shown)

CONCLUSIONS

The project viewed both Latin and Tifinagh scripts, and all the varied orthographic solutions within them, as writing tools to be evaluated and adapted across all Amazigh variants. This encourages technical evolution of the writing systems and creativity in Tifinagh typography - local traditions become simply styles of writing Amazigh, rather than constraints.

The project adopted a change in Unicode use for Tifinagh[1]. An interpretation based on a few abstract letters, rather than many visual variants, enabled representation of Algerian-style neo-Tifinagh and some Tuareg repertoires which had no previous support.

The resulting layouts, currently available for Windows, promote use of Unicode and good orthography so their use would boost the prestige of Amazigh. Users can type unfamiliar language variants and orthographies.

The benefits for a **Moroccan** user would be:

- an extended, international version of Ircam's Tifinagh keyboard
- fast input of occasional Latin letters, e.g. for the Internet
- control of calligraphic ligatures

For an **Algerian** user, the layouts also offer:

- improved typing speed
- emulation of other common Amazigh keyboards, and provision of obsolete features
- easy access to the 'non-breaking hyphen' for preventing constructs such as Kabyle 'iman-is' being split across lines
- Latin extended letter forms (favoured over the Greek ones)
- easy experimentation with Tifinagh

For a **Tuareg** user, the layouts offer:

- a shared way to type many Tifinagh repertoires[5] in Unicode
- Tifinagh vowels (APT technique only)
- Tifinagh ligature entry and the Tifinagh separator mark

The layouts, available at *http://www.akufi.org/*, are free to use and (with acknowledgement) free to distribute and adapt.

FUTURE WORK

This work could contribute to future, co-ordinated, developments in Amazigh orthography, typography and keyboard design (e.g. phone keypads).

The project's results need to be widely verified, and extended to other language variants and other technical platforms. Some orthographic features are still unstable.

The layouts need to be made more easily available, and the user documentation requires translation.

Guidance is also needed for Tifinagh font designers to encourage a variety of quality fonts.

http://www.akufi.org/

1) Anderson P. (2010). Evolution of the Tifinagh script in Unicode. L2/10-113, Unicode Consortium.

2) Elghamis R. (2004). Guide de lecture et d'écriture en tifinagh vocalisées. APT, Agadez, Niger.

3) Andries P. (2004). Proposal to add the Tifinagh Script. N2739R, Unicode Consortium.

4) Anderson P. (2010). Proposal to add two Tifinagh characters for vowels in Tuareg language variants. N3870 (L2/10-270), Unicode Consortium.

5) Elghamis R. (2010). Le tifinagh au Niger contemporain: Étude sur l'écriture indigène des Touaregs. PhD thesis. University of Leiden.