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21 February, 1992

To all of our friends interested in the use of the Ethiopic alphabet on computers:

As participants in the international committees concerned with coding the various scripts of the world, we have been helping to ensure complete coverage of the Ethiopic alphabet. One proposal which is presently being considered looks much like the enclosed. It is I think the best we have done so far.

This chart shows codes for consonants and vowels. The surface forms are produced automatically for each proper syllabic combination, whether regular or irregular. System software converts them automatically.

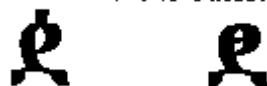
Thus the (typed or) coded sequence  is converted by system software into surface 

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Alternate forms for the "same" syllable are handled via different fonts.

We have attempted to include also all consonants used by various smaller language groups in Ethiopic Script. Please note the inclusion of the Bilen consonant "gh", at position 111D.

The consonant at position 111A is used in some materials for the Oromo language, and represents an implosive "d" sound. It has two typographic variants. They are considered equivalent, and one would use different fonts depending on which typographic form is desired. The two variants are the one shown and one other:



1. We urgently ask if you can discover that any additional consonant letters (in the first vowel series) are needed by any users of Ethiopic script in any of its modifications. This is the most important question we are aware of. International code committees must provide for all uses of each script, not merely a part of the usage.

2. The forms given to the vowel letters are of course only valid with some consonants. These are displayed next to a small dotted circle in the same manner used throughout the code standards to indicate that they are "combining" forms, not used independently.

3. The names given to the vowel letters are tentatively as follows. Letter names in ISO standards must consist only of the 26 uppercase Latin letters, so it is not easy to distinguish all of the Ethiopic vowels. The first one is "Ethiopic Vowel Letter AE" for example, only because this is sometimes represented by the Latin letter ä.

1130 AE	1131 U	1132 I	1133 A	1134 E	1135 SHWA	1136 O
1138 WAE		113A WI	113B WA	113C WE	113D W	

4. We do not have a good name for the Ethiopic vowel letter coded at 1137, which is used only on a very few consonants.

ኸ

Only for talking among ourselves we referred at one point to it as "specific AE" because it represented the same vowel as is normal in the first series with those consonants for which the first series vowel has a different sound. This information comes from Professor Wolf Leslau at the University of California, Los Angeles. Can you indicate which further consonants it occurs with? Suggest a better name? Specify phonetically anything else interesting about it?

5. Can you supply information on the various different alphabetical sorting orders used for Ethiopic script? We are aware of the basic Ge'ez order with extra letters inserted mostly as we have them for Amharic, Tigrinya, etc. We know of the following major variations:

A. A few letters which are no longer commonly used (like the "H" at 1102) are sorted like the modern letters with the same pronunciation (1100).

B. At least in one case the overbar is disregarded, as Tigrinya QH coded at 1109 is treated for alphabetical sorting order exactly like Q at 1108. (??)

C. Some letters which are more recently added are sometimes sorted at the end instead of where we have shown them. An example is "V" at 1107.

D. We do not know how the vowel form discussed in point 4 just above is sorted. That is, what is the alphabetical order of the following 8 forms? I give two different possible orders as a suggestion. Or is the special form noted in 4. above sorted as if the same as the first form? Or still another order ?? Which other consonants is this vowel form used with?

ኸ ኸ ኸ ኸ ኸ ኸ ኸ ኸ
ኸ ኸ ኸ ኸ ኸ ኸ ኸ ኸ

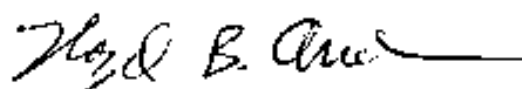
6. Does the number form represented at code 1153 represent the number 1000 or 10,000 in modern usage?

7. Are there any additional punctuation marks or symbols, either modern OR ANCIENT, which we should be including?

I thank you very much for your time and assistance. Any information you can provide will greatly assist the international committees in providing for the present and future needs of Ethiopic computing.

If you can send any comments by email, by Fax or by mail to arrive before the 4th of March, it will be most helpful. The next meeting of the Unicode Technical Committee is on March 5-6 in Seattle, and that organization will probably take a first step towards a more formal proposal. Our email address via Internet is ECOLING@Applelink.Apple.com. Our fax service (more expensive for us but needed for visual illustrations) is currently USA (202) 543-8393 Attention Lloyd Anderson. Please use it only for the purposes of responding to this letter. Thanks.

Sincerely yours,



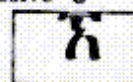
Dr. Lloyd B. Anderson

	110_	111_	112_	113_	114_	115_	116_	117_
0	ሀ	ኀ	ጸ	፬				ዐ
1	ለ	ከ	ጸ	፭	፩	፪		ዑ
2	ሐ	ከ	ፀ	፮	፫	፬		ዒ
3	መ	ኸ	ፈ	፯	፭	፮		ዓ
4	ሠ	ወ	ፐ	፰	፯	፱		ዜ
5	ረ	ዐ		shwa	፳	፻		ዕ
6	ሰ	ዘ		፱	፺	፻		ዖ
7	ሸ	ዝ		፻	፺	፻		ዐ
8	ቀ	የ		፳	፻	፻		ዓ
9	ቐ	ደ			፻	፻		
A	በ	ደ		፳	:	፻		ዓ
B	ቨ	ጀ		፳	:	፻		ዒ
C	ተ	ገ		፳	:			ዜ
D	ቸ	ኀ		፳	::			ዓ
E	ኀ	ጠ			:			
F	ነ	ጨ			:	:::		

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Note the presence of the Bilen consonant letter "G" with overbar (voiced velar fricative "gh") at 111D, and at 111A one of two typographic font variants for Oromo implosive "d"

The vowel marked by overbar at code 1137 occurs only on a few consonants:



Column 113_ displays the vowels in generalized abstract forms.

Column 117_ is an alternate display to aid understanding.