Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

**Doc Type:** **Working Group Document**
**Title:** **Preliminary proposal to encode the Old North Arabian script in the SMP of the UCS**
**Source:** **Michael Everson and Michael C. A. Macdonald**
**Status:** **Individual Contribution**
**Action:** **For consideration by JTC1/SC2/WG2 and UTC**
**Date:** **2010-02-23**

**1. Introduction.** The North Semitic script family split from the original abjad in the second millennium, and was used exclusively in Arabia and its immediate environs between at least the tenth century BCE and the sixth century CE. There were two branches: the Old North Arabian (Semiticists now tend to use the term Ancient North Arabian or ANA) and the Old South Arabian (also called Ancient South Arabian or ASA), and from the latter the abugida used for Geʿez and other languages of Ethiopia was derived. First the Old North Arabian, and then the Old South Arabian scripts disappeared in the first half millennium CE, and with the coming of Islam they were replaced by the Arabic script, which was derived from Aramaic via Nabataean.

The North Semitic scripts of Arabia are known only from inscriptions and all represent "dead" languages or dialects. So we cannot know the exact sounds represented by the letters. However, by comparing the etymology of the words in these scripts with related words in other Semitic languages (particularly Arabic) one can work out what is called the "etymological phoneme" expressed by each letter (regardless of how this was actually realized in speech). The etymological phonemic repertoire appears to be the same as that of Classical Arabic, with 28 consonants in Old North Arabian and 29 in Old South Arabian.

Old North Arabian is the collective term for a group of scripts (and the dialects they express) which were used in the western two-thirds of Arabia from Syria to the borders of Yemen. Three were used in oases and form a subgroup "Oasis North Arabian", while the others were used by nomads, and are known as "Desert North Arabian" (Macdonald 2009 I: 74–96). On the nomenclature used here see Macdonald 2009 III: 32–36. The earliest datable texts (Taymanitic and Thamudic B) are from the mid-sixth century BCE and the Old North Arabian scripts are thought to have fallen out of use after the fourth century CE since they reveal no trace of Christianity. Dadanitic (formerly "Dedanite" and "Lihyanite") was used in the oasis of Dadan/Dedān (modern al-ʿUlā in northwest Saudi Arabia). There are many formal inscriptions (often carved in relief) on stelae and rock-faces, and hundreds of graffiti. All formal inscriptions and most graffiti run horizontally right-to-left with words separated by a vertical line in the inscriptions. No everyday texts on perishable materials have yet been found, but their existence may be implied by the presence of cursive-style letter shapes which are mixed with monumental-style ones in many public inscriptions. These different forms were once thought to have chronological significance (Caskel 1954: 21–37) but their presence in the same inscriptions shows this is not so (Macdonald *forthcoming*). There are also many Minaic inscriptions at Dedān and this is the only known occasion on which settled users of an Old South Arabian and an Old North Arabian script lived in close proximity.

**2. Processing.** Old North Arabian is an alphabetic script consisting only of consonants; vowels are not indicated in the script, though some Dadanite texts do make limited use of *matres lectionis*. It is typically written right-to-left, but boustrophedon writing is also known. Glyphs are mirrored in lines when they have left-to-right directionality.

**3. Ordering.** Traditional sorting orders are poorly attested. One alphabet based on "North Semitic" order is known, as is one alphabet based on "Levantine" ordering. A number of other alphabets are known which sort the letters by shape; it is assumed that these may be mnemonic systems used to learn the alphabet, which seems to have been passed from person to person rather than imparted via formal schooling.

Because Old North Arabian derives from the Old South Arabian, the order of the characters in the code chart follows the latter. In the table below, transliteration is given, followed by the Old North Arabian and then the Old South Arabian and Ethiopic:

h l ḥ m q w $s^2$ r b t $s^1$ k n ḫ ṣ $s^3$ f ʾ ʿ ḍ g d ġ ṭ z ḏ y ṯ ẓ

(Old North Arabian glyph row)

(Old South Arabian glyph row)

(Ethiopic glyph row)

Modern scholars tend to prefer an alphabetical order based either on the Arabic abjad or the "Levantine" order. We recommend that the Unicode Collation Algorithm and ISO/IEC 14651 default to the former, but we give both here:

ʾ b t ṯ g ḥ ḫ d ḏ r z $s^1$ $s^2$ $s^3$ ṣ ḍ ṭ ẓ ʿ ġ f q k l m n h w y

(Old North Arabian glyph row)

ʾ b g d ḏ h w z ḥ ḫ ṭ ẓ y k l m n s ʿ ġ f ṣ ḍ q r š ś t ṯ

(Old North Arabian glyph row)

**4. Character names.** Although "Ancient North Arabian" has become quite common among Semiticists for this script, the term "Old North Arabian" is still current amongst students of writing systems. Since the UCS tends to use OLD in character names, the script has been called OLD NORTH ARABIAN here, parallel to the already-encoded OLD SOUTH ARABIAN. Some sources involved with writing systems use the term "North Arabic" but this term is misleading; "Arabian" refers to the peninsula, not to the language family "Arabic".

Character names have been based on UCS names for Arabic letters, with some alterations to reflect pronunciation. The letter ꝺ [g] is written GEEM rather than JEEM [dʒ], the letter ꝫ [ɬ] is written LHEEN rather than SHEEN [ʃ], and the letter ꝩ [ʃ] is written SHEEN rather than SEEN [s]. As with the Old South Arabian encoding annotations have been used to indicate that ꝫ LHEEN is transliterated *š* or $s^2$, ꝩ SHEEN as *s* or $s^1$, and ✳ SA as $s^3$. This last character is found in North Minaic and Taymanitic varieties of Old North Arabian.

**5. Numbers.** Three numbers are attested in Old North Arabian: 1 (l, a unit), 10 (◇, possibly derived from AYN for ʿꝫ *ʿšr* '10'), and 20 (�, two 10s stacked). The numbers have right-to-left directionality. In the chart below, the third column is displayed in visual order.

| | | | | | |
|---|---|---|---|---|---|
| 1 | ǀ | 1 ← | 11 | ǀ◊ | 1 + 10 ← |
| 2 | ǁ | 1 + 1 ← | 12 | ǁ◊ | 1 + 1 + 10 ← |
| 3 | ǁǀ | 1 + 1 + 1 ← | 13 | ǁǀ◊ | 1 + 1 + 1 + 10 ← |
| 4 | ǁǁ | 1 + 1 + 1 + 1 ← | 14 | ǁǁ◊ | 1 + 1 + 1 + 1 + 10 ← |
| 5 | ǁǁǀ | 1 + 1 + 1 + 1 + 1 ← | 15 | ǁǁǀ◊ | etc |
| 6 | ǁǁǁ | 1 + 1 + 1 + 1 + 1 + 1 ← | 16 | ǁǁǁ◊ | |
| 7 | ǁǁǁǀ | etc | 17 | ǁǁǁǀ◊ | |
| 8 | ǁǁǁǁ | | 18 | ǁǁǁǁ◊ | |
| 9 | ǁǁǁǁǀ | | 19 | ǁǁǁǁǀ◊ | |
| 10 | ◊ | 10 ← | 20 | ⧖ | 20 ← |
| 30 | ◊⧖ | 10 + 20 ← | 40 | ⧖⧖ | 20 + 20 ← |
| 50 | ◊⧖⧖ | 10 + 20 + 20 ← | 60 | ⧖⧖⧖ | 20 + 20 + 20 ← |
| 70 | ◊⧖⧖⧖ | 10 + 20 + 20 + 20 ← | 80 | ⧖⧖⧖⧖ | 20 + 20 + 20 + 20 ← |
| 90 | ◊⧖⧖⧖⧖ | 10 + 20 + 20 + 20 + 20 ← | | | |

**6. Punctuation.** In Dadanitic, a vertical word separator is usually used between words, but this is not generally used in the other dialects. In form it is typically identical to OLD NORTH ARABIAN NUMBER ONE. A script-specific word separator has not been proposed here, as the character can do double duty here as in Old South Arabian

**7. Glyph shapes.** The glyph shapes used above and in the chart below reflect the monumental Dadanite glyphs. As can be seen in Figure 2, the other alphabets differ considerably, but it is envisaged that these differences are best handled by dialect-specific fonts. This is similar to the model used for Old Italic.

**8. Unicode Character Properties**

```
10A80;OLD NORTH ARABIAN LETTER HEH;Lo;0;R;;;;;N;;;;;
10A81;OLD NORTH ARABIAN LETTER LAM;Lo;0;R;;;;;N;;;;;
10A82;OLD NORTH ARABIAN LETTER HAH;Lo;0;R;;;;;N;;;;;
10A83;OLD NORTH ARABIAN LETTER MEEM;Lo;0;R;;;;;N;;;;;
10A84;OLD NORTH ARABIAN LETTER QAF;Lo;0;R;;;;;N;;;;;
10A85;OLD NORTH ARABIAN LETTER WAW;Lo;0;R;;;;;N;;;;;
10A86;OLD NORTH ARABIAN LETTER LHEEN;Lo;0;R;;;;;N;;;;;
10A87;OLD NORTH ARABIAN LETTER REH;Lo;0;R;;;;;N;;;;;
10A88;OLD NORTH ARABIAN LETTER BEH;Lo;0;R;;;;;N;;;;;
10A89;OLD NORTH ARABIAN LETTER TEH;Lo;0;R;;;;;N;;;;;
10A8A;OLD NORTH ARABIAN LETTER SHEEN;Lo;0;R;;;;;N;;;;;
10A8B;OLD NORTH ARABIAN LETTER KAF;Lo;0;R;;;;;N;;;;;
10A8C;OLD NORTH ARABIAN LETTER NOON;Lo;0;R;;;;;N;;;;;
10A8D;OLD NORTH ARABIAN LETTER KHAH;Lo;0;R;;;;;N;;;;;
10A8E;OLD NORTH ARABIAN LETTER SAD;Lo;0;R;;;;;N;;;;;
10A8F;OLD NORTH ARABIAN LETTER SA;Lo;0;R;;;;;N;;;;;
10A90;OLD NORTH ARABIAN LETTER FEH;Lo;0;R;;;;;N;;;;;
10A91;OLD NORTH ARABIAN LETTER ALEF;Lo;0;R;;;;;N;;;;;
10A92;OLD NORTH ARABIAN LETTER AIN;Lo;0;R;;;;;N;;;;;
10A93;OLD NORTH ARABIAN LETTER DAD;Lo;0;R;;;;;N;;;;;
10A94;OLD NORTH ARABIAN LETTER GEEM;Lo;0;R;;;;;N;;;;;
10A95;OLD NORTH ARABIAN LETTER DAL;Lo;0;R;;;;;N;;;;;
10A96;OLD NORTH ARABIAN LETTER GHAIN;Lo;0;R;;;;;N;;;;;
10A97;OLD NORTH ARABIAN LETTER TAH;Lo;0;R;;;;;N;;;;;
10A98;OLD NORTH ARABIAN LETTER ZAIN;Lo;0;R;;;;;N;;;;;
10A99;OLD NORTH ARABIAN LETTER THAL;Lo;0;R;;;;;N;;;;;
10A9A;OLD NORTH ARABIAN LETTER YEH;Lo;0;R;;;;;N;;;;;
10A9B;OLD NORTH ARABIAN LETTER THEH;Lo;0;R;;;;;N;;;;;
10A9C;OLD NORTH ARABIAN LETTER ZAH;Lo;0;R;;;;;N;;;;;
10A9D;OLD NORTH ARABIAN NUMBER ONE;No;0;R;;;;1;N;;;;;
10A9E;OLD NORTH ARABIAN NUMBER TEN;No;0;R;;;;10;N;;;;;
10A9F;OLD NORTH ARABIAN NUMBER TWENTY;No;0;R;;;;20;N;;;;;
```

conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment of the Humanities.

## 10. Bibliography

Caskel, Werner. 1954. *Lihyan und Lihyanisch*. (Arbeitsgemeinschaft für Forschung des Landes Nordrhein-Westfalen, Geisteswissenschaften, 4). Cologne: Westdeutscher Verlag.

Macdonald, Michael C. A. 2004. "Ancient North Arabian", in Roger D. Woodard, ed. *The Cambridge Encyclopedia of the World's Ancient Languages*. Cambridge: Cambridge University Press. ISBN 0-521-56256-2

Macdonald, Michael C.A. 2008. "The Phoenix of Phoinikēia: Alphabetic reincarnation in Arabia" in *The Disappearance of Writing Systems: Perspectives on Literacy and Communication*, ed. J. Baines, J. Bennet & S. Houston, pp. 207–229. London: Equinox.

Macdonald, Michael C.A. 2009. *Literacy and Identity in Pre-Islamic Arabia*. Farnham: Ashgate.

Macdonald, Michael C.A. *forthcoming*. "Towards a re-assessment of the Ancient North Arabian alphabets used in the oasis of al-ʿUlā."

O'Connor, M. 1996. "Epigraphic Semitic scripts" in *The World's Writing Systems*, ed. Peter T. Daniels & William Bright. New York; Oxford: Oxford University Press. ISBN 0-19-507993-0

| | 10A8 | 10A9 |
|---|---|---|
| 0 | ⼓ 10A80 | ⼓ 10A90 |
| 1 | ⼓ 10A81 | ⼓ 10A91 |
| 2 | ⼓ 10A82 | ⼓ 10A92 |
| 3 | ⼓ 10A83 | ⼓ 10A93 |
| 4 | ⼓ 10A84 | ⼓ 10A94 |
| 5 | ⼓ 10A85 | ⼓ 10A95 |
| 6 | ⼓ 10A86 | ⼓ 10A96 |
| 7 | ⼓ 10A87 | ⼓ 10A97 |
| 8 | ⼓ 10A88 | ⼓ 10A98 |
| 9 | ⼓ 10A89 | ⼓ 10A99 |
| A | ⼓ 10A8A | ⼓ 10A9A |
| B | ⼓ 10A8B | ⼓ 10A9B |
| C | ⼓ 10A8C | ⼓ 10A9C |
| D | ⼓ 10A8D | ⼓ 10A9D |
| E | ⼓ 10A8E | ⼓ 10A9E |
| F | ⼓ 10A8F | ⼓ 10A9F |

## Letters

10A80   ʱ   OLD NORTH ARABIAN LETTER HEH
- transliterated as h
- → 1200 ሀ ethiopic syllable ha
- → 10A60 Ꮔ old south arabian letter ha

10A81   ᐭ   OLD NORTH ARABIAN LETTER LAM
- transliterated as l
- → 1208 ለ ethiopic syllable la
- → 10A61 ᛌ old south arabian letter lamedh

10A82   ᐱ   OLD NORTH ARABIAN LETTER HAH
- transliterated as 1E25 ḥ
- → 1210 ሐ ethiopic syllable hha
- → 10A62 ᑫ old south arabian letter heth

10A83   ᐯ   OLD NORTH ARABIAN LETTER MEEM
- transliterated as m
- → 1218 መ ethiopic syllable ma
- → 10A63 ᔐ old south arabian letter mem

10A84   የ   OLD NORTH ARABIAN LETTER QAF
- transliterated as q
- → 1240 ቀ ethiopic syllable qa
- → 10A64 ᛦ old south arabian letter qoph

10A85   Φ   OLD NORTH ARABIAN LETTER WAW
- transliterated as w
- → 12C8 ወ ethiopic syllable wa
- → 10A65 Φ old south arabian letter waw

10A86   ᛜ   OLD NORTH ARABIAN LETTER LHEEN
- transliterated as 0161 š or s2
- → 1220 ሠ ethiopic syllable sza
- → 10A66 ᛜ old south arabian letter shin

10A87   ᐟ   OLD NORTH ARABIAN LETTER REH
- transliterated as r
- → 1282 ሬ ethiopic syllable ra
- → 10A67 ᐠ old south arabian letter resh

10A88   ᑌ   OLD NORTH ARABIAN LETTER BEH
- transliterated as b
- → 1260 በ ethiopic syllable ba
- → 10A68 ᑎ old south arabian letter beth

10A89   ᚷ   OLD NORTH ARABIAN LETTER TEH
- transliterated as t
- → 1270 ተ ethiopic syllable ta
- → 10A69 ᚷ old south arabian letter taw

10A8A   ᚲ   OLD NORTH ARABIAN LETTER SHEEN
- transliterated as s or s1
- → 1230 ሰ ethiopic syllable sa
- → 10A6A ᚺ old south arabian letter sat

10A8B   ᚲ   OLD NORTH ARABIAN LETTER KAF
- transliterated as k
- → 12A8 ከ ethiopic syllable ka
- → 10A6B ᚻ old south arabian letter kaph

10A8C   ᛣ   OLD NORTH ARABIAN LETTER NOON
- transliterated as n
- → 1290 ነ ethiopic syllable na
- → 10A6C ᚻ old south arabian letter nun

10A8D   ᚴ   OLD NORTH ARABIAN LETTER KHAH
- transliterated as 1E2B ḫ
- → 1280 ኀ ethiopic syllable xa
- → 10A6D ᚄ old south arabian letter kheth

10A8E   ᛉ   OLD NORTH ARABIAN LETTER SAD
- transliterated as 1E63 ṣ
- → 1338 ጸ ethiopic syllable tsa
- → 10A6E ᚺ old south arabian letter sadhe

10A8F   ✵   OLD NORTH ARABIAN LETTER SA
- transliterated as s3
- → 10A6F ✕ old south arabian letter samekh

10A90   ∩   OLD NORTH ARABIAN LETTER FEH
- transliterated as f
- → 1348 ፈ ethiopic syllable fa
- → 10A70 ◊ old south arabian letter

10A91   ᚹ   OLD NORTH ARABIAN LETTER ALEF
- transliterated as 02BC
- → 12A0 አ ethiopic syllable glottal a
- → 10A71 ᚹ old south arabian letter alef

10A92   ○   OLD NORTH ARABIAN LETTER AIN
- transliterated as 02BD
- → 12D0 ዐ ethiopic syllable pharyngeal a
- → 10A72 ○ old south arabian letter ayn

10A93   Ⅲ   OLD NORTH ARABIAN LETTER DAD
- transliterated as 1E0D ḍ
- → 1340 ጰ ethiopic syllable tza
- → 10A73 Ⅱ old south arabian letter dhadhe

10A94   ᗩ   OLD NORTH ARABIAN LETTER GEEM
- transliterated as g
- → 1308 ገ ethiopic syllable ga
- → 10A74 ᒣ old south arabian letter gimel

10A95   ᗕ   OLD NORTH ARABIAN LETTER DAL
- transliterated as d
- → 12F0 ደ ethiopic syllable da
- → 10A75 ᗑ old south arabian letter daleth

10A96   ᑎ   OLD NORTH ARABIAN LETTER GHAIN
- transliterated as 0121 ġ
- → 10A76 ᑎ old south arabian letter ghayn

10A97   ᗄ   OLD NORTH ARABIAN LETTER TAH
- transliterated as 1E6D ṭ
- → 1320 ጠ ethiopic syllable tha
- → 10A77 Ⅲ old south arabian letter teth

10A98   ᚼ   OLD NORTH ARABIAN LETTER ZAIN
- transliterated as z
- → 12D8 ዘ ethiopic syllable za
- → 10A78 ᚷ old south arabian letter zayn

10A99   ᚽ   OLD NORTH ARABIAN LETTER THAL
- transliterated as 1E0F ḏ
- → 10A79 ᚻ old south arabian letter dhaleth

10A9A   ᛎ   OLD NORTH ARABIAN LETTER YEH
- transliterated as y
- → 12E8 የ ethiopic syllable ya
- → 10A7A ᛎ old south arabian letter yodh

10A9B   ᚼ   OLD NORTH ARABIAN LETTER THEH
- transliterated as 1E6F ṯ
- → 10A7B ᚼ old south arabian letter thaw

10A9C   ᚴ   OLD NORTH ARABIAN LETTER ZAH
- transliterated as 1E93 ẓ
- → 10A7C ᚼ old south arabian letter theth

## Numbers

10A9D   ᛁ   OLD NORTH ARABIAN NUMBER ONE
10A9E   ◇   OLD NORTH ARABIAN NUMBER TEN
10A9F   ⚘   OLD NORTH ARABIAN NUMBER TWENTY

**Figures**
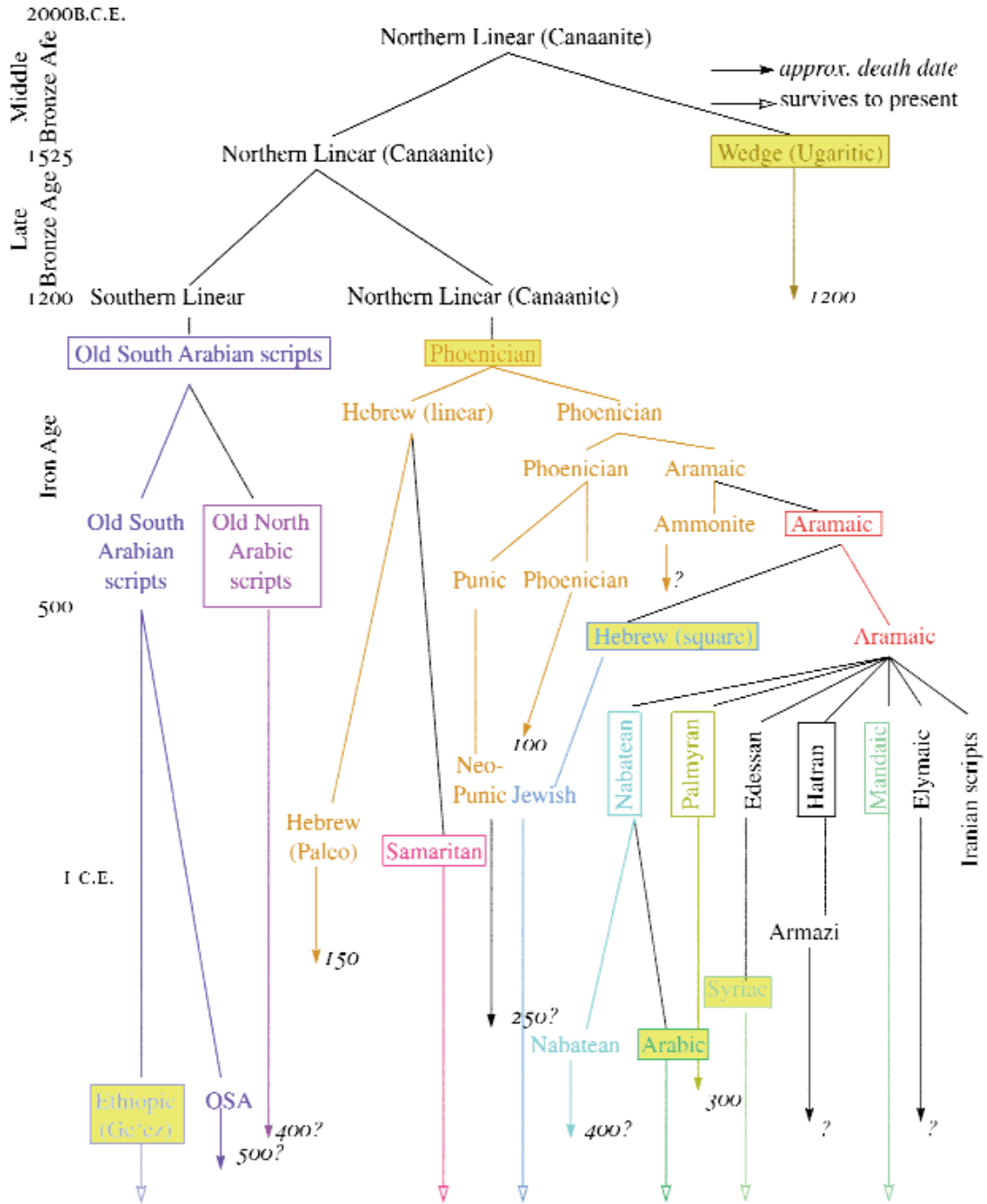


FIGURE 4. Family tree of ancient Semitic scripts

**Figure 1.** Family tree of ancient Semitic scripts, from O'Connor 1996, to which an "Iranian scripts" node has been added. Boxes have been drawn around nodes which have been or are expected to be encoded. Colour indicates familial unifications.

| Transliteration | Hasaitic | North Minaic | Dadanitic | Taymanitic | Dumaitic | Thamudic B | Thamudic C | Thamudic D | Hismaic | Safaitic |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| ʾ | | | | | | | | | | |
| ʿ | | | | | | | | | | |
| b | | | | | | | | | | |
| d | | | | | | | | | | |
| ḍ | | | | | | | | ? | | |
| ḏ | | | | | | | | ? | | |
| f | | | | | | | | ? | | |
| g | | | | | | | | ? | | |
| ġ | | | | | | | ? | ? | | |
| h | | | | | | | | | | |
| ḥ | | | | | | | | | | |
| ḫ | | | | | | | | | | |
| k | | | | | | | | | | |
| l | | | | | | | | | | |
| m | | | | | | | | | | |
| n | | | | | | | | | | |
| q | | | | | | | | | | |
| r | | | | | | | | | | |
| s¹ | | | | | | | | | | |
| s² | | | | | | | | | | |
| s³ | | | | | | | | | | |
| ṣ | | | | | | | | | | |
| t | | | | | | | | | | |
| ṭ | | | | | | | | | | |
| ṯ | | | | | | | ? | | | |
| w | | | | | | | | | | |
| y | | | | | | | | | | |
| z | | | | | | | | | | |
| ẓ | ? | | | | | | | | | |

**Figure 2.** Table of Old North Arabian alphabets

TABLE 5.6: *North Arabic Scripts (Garbini 1979, fig. 9)[a]*

| | XXI | XXII | XXIII | XXIV | XXV | XXVI |
|---|---|---|---|---|---|---|
| ʾ | | | | | | |
| b | | | | | | |
| g | | | | | | |
| d | | | | | | |
| ḏ | | | | | | |
| h | | | | | | |
| w | | | | | | |
| z | | | | | | |
| ḥ | | | | | | |
| ḫ | | | | | | |
| ṭ | | | | | | |
| ẓ | | | | | | |
| y | | | | | | |
| k | | | | | | |
| l | | | | | | |
| m | | | | | | |
| n | | | | | | |
| s | | | | | | |
| ʿ | | | | | | |
| ġ | | | | | | |
| f | | | | | | |
| ṣ | | | | | | |
| ḍ | | | | | | |
| q | | | | | | |
| r | | | | | | |
| š | | | | | | |
| t | | | | | | |
| ṯ | | | | | | |

a. Col. XXI, Dedanite; col. XXII, Late Liḥyanite; cols. XXIII–XXV, Thamudic (XXIII, Teima; XXIV, Hejaz; XXV, Tabuk); col. XXVI, Safaitic.

**Figure 3.** Table of North Arabian scripts, from O'Connor 1996.

**Figure 4.** Sample of a Dadanite inscription.



**Figure 5.** Sample of a Dadanite inscription.

**Figure 6.** Old North Arabian inscription.



**Figure 7.** Dadanite monumental inscription with the word separator shown as a broken bar ¦.

## A. Administrative

1. Title
**Preliminary proposal to encode the Old North Arabian script in the SMP of the UCS.**
2. Requester's name
**Michael Everson and Michael C. A. Macdonald**
3. Requester type (Member body/Liaison/Individual contribution)
**Individual contribution.**
4. Submission date
**2010-02-23**
5. Requester's reference (if applicable)
6. Choose one of the following:
6a. This is a complete proposal
**No.**
6b. More information will be provided later
**Yes.**

## B. Technical – General

1. Choose one of the following:
1a. This proposal is for a new script (set of characters)
**Yes.**
1b. Proposed name of script
**Old North Arabian.**
1c. The proposal is for addition of character(s) to an existing block
**No.**
1d. Name of the existing block
2. Number of characters in proposal
**32.**
3. Proposed category (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)
**Category E.**
4a. Is a repertoire including character names provided?
**Yes.**
4b. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?
**Yes.**
4c. Are the character shapes attached in a legible form suitable for review?
**Yes.**
5a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?
**Michael Everson.**
5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:
**Michael Everson, Fontographer.**
6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?
**Yes.**
6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?
**Yes.**
7. 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. 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 Unicode Character Database http://www.unicode.org/Public/UNIDATA/UnicodeCharacterDatabase.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.
**See above.**

## C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.
**No.**
2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?
**Yes.**
2b. If YES, with whom?
**Michael C. A. Macdonald.**
2c. 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?
**Semiticists and other scholars.**

4a. The context of use for the proposed characters (type of use; common or rare)

**Rare.**

4b. Reference

5a. Are the proposed characters in current use by the user community?

**Yes.**

5b. If YES, where?

**Scholarly publications.**

6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?

**No.**

6b. If YES, is a rationale provided?

6c. If YES, reference

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

**No.**

8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?

**No.**

8b. If YES, is a rationale for its inclusion provided?

8c. If YES, reference

9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

**No.**

9b. If YES, is a rationale for its inclusion provided?

9c. If YES, reference

10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?

**Yes.**

10b. If YES, is a rationale for its inclusion provided?

**Yes.**

10c. If YES, reference

**Old North Arabian derives from Old South Arabian, and there is a similarity between some of their glyphs.**

11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

**No.**

11b. If YES, is a rationale for such use provided?

11c. If YES, reference

11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

**No.**

11e. If YES, reference

12a. Does the proposal contain characters with any special properties such as control function or similar semantics?

**No.**

12b. If YES, describe in detail (include attachment if necessary)

13a. Does the proposal contain any Ideographic compatibility character(s)?

**No.**

13b. If YES, is the equivalent corresponding unified ideographic character(s) identified?