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

## Doc Type: Working Group Document <br> Title: Proposal for encoding the Nabataean script in the SMP of the UCS <br> Source: UC Berkeley Script Encoding Initiative (Universal Scripts Project) <br> Author: Michael Everson <br> Status: Liaison Contribution <br> Action: For consideration by JTC1/SC2/WG2 and UTC <br> Date: 2010-12-09

## 1. Introduction.

The Nabataean Kingdom was at first limited to the territories surrounding the city of Petra, north of the Red Sea, but eventually annexed the Transjordan to Damascus and spread south to Hijâz (to Hegra, modern Madâin Sâlih). They spoke either Aramaic or Arabic - scholars are still divided on the question - but developed a cursive Aramaic script now known as Nabataean, which became widely used, from the second century BCE to the fourth century CE, when the Roman province of Arabia was formed. The script was still used, with small developments, in the third century in Sinai.

The glyphs of the Nabataean script are more ornate than other Aramaic scripts, with circles, loops, and flourishes found in some inscriptions. As the script developed, a range of ligatures and final forms was introduced, evidently as an aid to faster letter writing, ideal for business transactions.

Nabataean is generally considered to be the immediate parent of the Arabic script. An inscription found at An-Namâra, Syria, dating from the fourth century CE, is believed to be one of the oldest Arabic texts; its letterforms show that the Arabic script is derived from the Nabataean prototype.
2. Processing. Nabataean is written from right to left horizontally. Nabataean language inscriptions usually have no space (or extremely narrow space) between words; modern editors tend to insert U+0020 SPACE. Nine final letters exist; these are used commonly in texts but are not obligatory. The letter nabataean letter final nun is to be treated in the same way as hebrew letter final nun is, and the same goes for the other final letters. (Presumably this would be the case for keyboard input as well.) The letters and their finals are as follows:

| 2 | FINAL ALEPH | $\sigma$ | ALEPH |
| :---: | :---: | :---: | :---: |
| $\square$ | FINAL BETH | $\checkmark$ | BETH |
| T | FINAL HE | $\pi$ | HE |
| 5 | FINAL YODH | 3 | YODH |
| 7 | FINAL KAPH | 〕 | KAPH |
| b | FINAL LAMEDH | J | LAMEDH |
| 0 | FINAL MEM | $\checkmark$ | MEM |
| 1 | FINAL NUN | 」 | NUN |
| $F$ | FINAL SHIN | $F$ | SHIN |

The final letters are encoded separately because it is not possible to predict their occurrence. In figure 5, for example, at the end of line 2 a FINAL YODH appears, as would be expected, but in line 3 , a YODH
appears before a space in the sixth word. Scholars need to be able to type the forms that appear in texts. Relying on a context-shaping model would require use of ZWJ and zWNJ, which would interfere with analysis of the text.
3. Glyphs. Although Nabataean inscriptions show many ligatures, in fact the standardization of such ligatures is very erratic, and so it is not possible to treat Nabataean as though it were Arabic, with cursive classes and regular joinings, final forms, etc. In fact even comprehensive treatises on the Nabataean script like Yardeni 2000 do not give such charts. Accordingly only the base characters are proposed for encoding, and no particular ligation or shaping behaviour is defined, as it cannot be mandated. The reference glyphs in the code chart were drawn by Laïla Nehmé and digitized by Michael Everson. The glyphs were selected based on the fact they were widespread, were used in the first century CE , and would be recognizable to scholars.
4. Sorting. The final consonants are treated as variants of the main consonants:
5. Character names. The names used for the characters here are based on those used for Imperial Aramaic. Other West Semitic names may have some currency.
6. Numerals. Nabataean numerals are built up out of $1,2,3,4,5,10,20$, and 100 . The numbers 2 V and 3 $\mathbb{U}$ and $4 \mathbb{W}$ are composed of multiples of 1 I , but because in practice the numbers are clumped together as units separate from one another they are encoded as individual characters; divided forms II, W, WU, UU are also found. A CRUCIFORM NUMBER FOUR $X$ also exists; in sorting it is handled as a third-level distinction from the ordinary NUMBER FOUR W. Nabataean also has numbers for $5 S, 10 \cap, 203$, and 100 . The numbers have right-to-left directionality. In the chart below, the third and sixth columns are displayed in visual order.

| 1 | \| | $1 \leftarrow$ | 11 | $\bigcirc($ also $\curvearrowleft)$ | $1+10 \leftarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | U | $2 \leftarrow$ | 12 | $\cup \sim$ | $2+10 \leftarrow$ |
| 3 | U | $3 \leftarrow$ | 13 | $山^{\square}$ | $3+10 \leftarrow$ |
| 4 | W, $\times$ | $4 \leftarrow$ | 14 | W $\frown, \times \frown$ | $4+10 \leftarrow$ |
| 5 | $s$ | $5 \leftarrow$ | 15 | Sn | $5+10 \leftarrow$ |
| 6 | 15 (also S ) | $1+5 \leftarrow$ | 16 | $\mathrm{B} \cap$ | $1+5+10 \leftarrow$ |
| 7 | US | $2+5 \leftarrow$ | 17 | US | $2+5+10 \leftarrow$ |
| 8 | US | $3+5 \leftarrow$ | 18 | US | $3+5+10 \leftarrow$ |
| 9 | WS, XS | $4+5 \leftarrow$ | 19 | WS $\cap$, XS | $4+5+10 \leftarrow$ |
| 10 | $\bigcirc$ | $10 \leftarrow$ | 100 | 9 | $100+1 \leftarrow$ |
| 20 | 3 (21 13 or 3) | $20 \leftarrow$ | 200 | \% | $100+2 \leftarrow$ |
| 30 | ค3 | $10+20 \leftarrow$ | 300 | 9 L | $100+3 \leftarrow$ |
| 40 | 33 | $20+20 \leftarrow$ | 400 | 9 m , 9x | $100+4 \leftarrow$ |
| 50 | ค33 | $10+20+20 \leftarrow$ | 500 | 95 | $100+5 \leftarrow$ |
| 60 | 333 | $20+20+20 \leftarrow$ | 600 | 915 | $100+1+5 \leftarrow$ |
| 70 | $\bigcirc 333$ | $10+20+20+20 \leftarrow$ | 700 | 9US | $100+2+5 \leftarrow$ |
| 80 | 3333 | $20+20+20+20 \leftarrow$ | 800 | 9 ${ }^{\text {US }}$ | $100+3+5 \leftarrow$ |
| 90 | ค3333 | $10+20+20+20+20 \leftarrow$ | 900 | 9 W ¢, 9×5 | $100+4+5 \leftarrow$ |

## 7. Unicode Character Properties

10880; NABATAEAN LETTER FINAL ALEPH;LO; $0 ; R ; ; ; ; N ; ; ; ;$
 10882;NABATAEAN LETTER FINAL BETH;LO;0;R; ; ; ; ; N; ; ; ; ; 10883;NABATAEAN LETTER BETH;LO;0;R;;;;iN;;;; 10884;NABATAEAN LETTER GIMEL;LO;0;R; ; ; ; N; ; ; ; ; 10885;NABATAEAN LETTER DALETH;LO;0;R;;;;iN; ; ; ; 10886; NABATAEAN LETTER FINAL HE;LO;0;R; ; ; ; ; $;$; ; ; ; 10887;NABATAEAN LETTER HE;LO;O;R;;;;iN;;;; 10888;NABATAEAN LETTER WAW;LO;0;R;;;;;N;;;; 10889;NABATAEAN LETTER ZAYIN;LO;0;R;;;;iN; ; ; ; 1088A;NABATAEAN LETTER HETH;LO;0;R; ; ; ; N; ; ; ; ; 1088B;NABATAEAN LETTER TETH;LO;0;R; ; ; ; $N ; ; ; ;$ 1088C;NABATAEAN LETTER FINAL YODH;LO;0;R; ; ; ; $N ; ; ; ;$ 1088D; NABATAEAN LETTER YODH;LO;0;R; ; ; ; N; ; ; ; ; 1088E;NABATAEAN LETTER FINAL KAPH;LO;0;R;;;;iN; ; ; ; 1088F; NABATAEAN LETTER KAPH;LO;0;R; ; ; ; N; ; ; ; ; 10890;NABATAEAN LETTER FINAL LAMEDH;LO;0;R; ; ; ; N; ; ; ; ; 10891; NABATAEAN LETTER LAMEDH;LO;0;R;;;;iN;;;; 10892; NABATAEAN LETTER FINAL MEM;LO;0;R; ; ; ; N; ; ; ; ; 10893;NABATAEAN LETTER MEM;LO;0;R; ; ; ; ; $;$; ; ; ; 10894; NABATAEAN LETTER FINAL NUN;LO;0;R; ; ; ; N; ; ; ; ; 10895;NABATAEAN LETTER NUN;LO;0;R; ; ; ; $N ; ; ; ;$ 10896; NABATAEAN LETTER SAMEKH;LO;0;R; ; ; ; ; $;$; ; ; ; 10897;NABATAEAN LETTER AYIN;LO;0;R; ; ; ; N; ; ; ; ; 10898;NABATAEAN LETTER PE;LO;O;R; ; ; ; $N ;$; ; ; ; 10899;NABATAEAN LETTER SADHE;LO;0;R;;;;i; ; ; ; ; 1089A; NABATAEAN LETTER QOPH;LO;0;R; ; ; ; N; ; ; ; ; 1089B; NABATAEAN LETTER RESH;Lo;0;R;;;;iN;;;; 1089C;NABATAEAN LETTER FINAL SHIN;LO;0;R; ; ; ; ; $;$; ; ; ; 1089D; NABATAEAN LETTER SHIN;LO;0;R;;;;iN;;;; 1089E;NABATAEAN LETTER TAW;LO;0;R; ; ; ; ; $;$; ; ; ; 108A7;NABATAEAN NUMBER ONE;No;0;R; ; ; $1 ; N ; ; ; ;$ 108A8;NABATAEAN NUMBER TWO;NO;0;R;;;i2;N;;;; 108A9; NABATAEAN NUMBER THREE;NO;0;R; ; ; 3 ; $\mathrm{N} ; \boldsymbol{;} ; \boldsymbol{;} ;$ 108AA; NABATAEAN NUMBER FOUR;NO;0;R;;;i4;N; ; ; ; 108AB; NABATAEAN CRUCIFORM NUMBER FOUR;NO; $0 ; R ; ; ; 4 ; N ; ; ; ;$ 108AC; NABATAEAN NUMBER FIVE;NO;0;R; ; ; 5 ; N; ; ; ; ; 108AD; NABATAEAN NUMBER TEN;NO;0;R; ; ; $10 ; \mathrm{N} ; \mathbf{;} ; \mathbf{;} ;$ 108AE; NABATAEAN NUMBER TWENTY;NO;0;R;;;i20;N; ; ; ; 108AF; NABATAEAN NUMBER ONE HUNDRED;NO;0;R; ; ; 100 ; $\boldsymbol{N} ; \boldsymbol{;} ; \mathbf{;}$
8. Punctuation. Script-specific punctuation for Nabataean is not known.

## 9. Bibliography

Ballhorn, Friedrich. 1864. Alphabete orientalischer und occidentalischer Sprachen. Leipzig: Brockhaus. Cantineau, J. 1930-1932. Le Nabatéen. Paris,
Christian, Arthur. 1905. Débuts de l'imprimerie en France: L'Imprimerie Nationale; L'Hôtel de Rohan. Paris: Imprimerie Nationale.
Faulmann, Carl. 1990 (1880). Das Buch der Schrift. Frankfurt am Main: Eichborn. ISBN 3-8218-1720-8
Fossey, Charles. 1948. Notices sur les caractères étrangers anciens et modernes rédigées par un groupe e savants. Nouvelle édition míse à jour à l'occasion du 21e Congrès des Orientalistes. Paris: Imprimerie Nationale de France.
Imprimerie Nationale. 1990. Les caractères de l'Imprimerie Nationale. Paris: Imprimerie Nationale Éditions. ISBN 2-11-081087-8
Yardeni, Ada. 2000. Textbook of Aramaic, Hebrew, and Nabataean documentary texts from the Judaean desert and related material. Jerusalem: The Ben-Zion Dinur Center for Research in Jewish History, The Hebrew University. ISBN 965-350-083-X
10. Acknowledgements. This project was made possible in part by a grant from the U.S. National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at UC Berkeley) in respect of the Nabataean encoding. Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment of the Humanities.


## 11．Figures．

| Hauranitisch |  | Nabathäisch | Palmyrenisch | Wert |
| :---: | :---: | :---: | :---: | :---: |
| nach Halívy | H．Meller |  |  |  |
| XYKYib2 \％\％ | \} | 00－ 0666 | $\boldsymbol{N X}$ | a |
| ））C（く） | 2 | フコノノ | ソコ | b |
| T」イ」「よ」 | 7 | ＞ $3>y+\lambda$ | $\lambda$ | g |
| 4pdpト1 | 4 | 9 ¢47 | Y | d |
|  | 月 |  | $x$ | h |
| yrdk 11 |  | 7947 | 37 | w |
| H IIN ${ }^{\text {d }}$ | （1） | 1 | 1 | z |
|  | ＊ | บบ JMH | H | x |
| X \＆ |  |  |  |  |
| HNN | ก | ロロ665 | G | t |
| ibioil | id | 35 ds | P | y |
| エさナて4 | $k y$ | 9ちリフ7 | y 3 | k |
| しJ। | ／$\}$ | $\checkmark$ リリム | Y | 1 |
| 88CVAロ目OV | 1 | ロタロオワロUご | 5 | m |
| 1 | $\varepsilon$ | J」1 | Js | n |
| ヘV |  | 口 P | Th | s |
| －めDの | － | y y ¢ 4 | $y \pm$ | a |
| $\otimes \theta$ © ๑．日凹 | J | 9921 | 3.2 | p |
| $\}\}$ | $\theta$ | nとカトr | $\downarrow$ | s |
| 中 $\dagger$ † | ¢ | P 9 | ת | q |
| ）CDC ${ }^{\text {a }}$ | 3） | フ1ノ7 | צท | r |
| 3\}\{2 | 32 | к $k$ | $v$ | \％ |
| $x+$ | $X \mathrm{Xdx}$ | のпл几 | ¢ | t |

In der Wüste Hauran，welche sich zwischen Palästina und Arabien er－ streckt，befinden sich Ruinen mit merkwürdigen Inschriften，welche ein Mittelglied zwischen himyarischen und aramäischen Formen bilden．An sie erhlieseon sich die nalmurenicohe und
die Schrift der Nabathäer，deren Haupt－ stadt Petra war；die hier gegebenen Zeichen sind theils den Münzen aus dem 2．Jahrhundert v．Chr．，theils den sinaitischen Inschriften entnommen， deren Entzifferung besonders den Studien Lavy＇s \％u verdanken ist．

Figure 1．Chart of＂scripts in the east of Palestine＂from Faulmann 1880，showing Nabataean．
（184）Das Verhälınis der mandäischen und nabatäischen Schrift zum aramäischen Konsonantenalphabet

| 蓈 |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  | $l$ | Ll Jヵ）J J |
| $b$ | 94 J） | m | 外 $30300 \pi$ |
| $\xrightarrow{\text { g．}}$（ambo．） | $1 \lambda$ 班 $31>$ | $n$ | 放 10 |
| d | כ 4417 | $s$ | 3\} O D D |
| $h$ | 10 ndon $n 6908$ |  | － |
| $w$ | 7797970 | $\begin{gathered} p ; f \\ (\text { araba, }) \end{gathered}$ | 19 3］J9\％v |
| $z$ | 272 1 Ir 1 | ＊ | MH SP pp V |
| $\stackrel{h}{6}$ | Hh H NHK $\sim$ | $q$ | Pr ；Ppg y |
| $t$ | b bobbl 10 | r | 44747 74 |
| $j$ |  | s | $\checkmark$＜fff $\mathrm{v}_{\text {¢ }}$ |
| $k$ | \％44 74 \％ | t | hhn hみ」 |

Figure 2．Chart of Semitic scripts from Haarmann 1990，showing Nabataean．
In Harmann＇s original table the characters are all upside－down；this has been corrected here．

TABLE 5．5：Scripts Derived from Aramaic Script（Garbini 1979，fig．7）${ }^{a}$

|  | XVII | XVIII | XIX | xX |
| :---: | :---: | :---: | :---: | :---: |
| ， | ～$\times$ |  | ¢ $\triangle$ б | $\checkmark$ |
| b | ¢כコ | $y$ y | ソソノ」 | $\checkmark$ |
| g | $\lambda$ | $\lambda 4$ | $\wedge \lambda>$ | $\rangle$ |
| d | 47 | $y$ y | 44 | $>$ |
| h | $\pi$ |  | $\Pi$ 入 $\Rightarrow$－ | \＆${ }^{\text {a }}$ |
| w | 71 |  | 999 | 9 |
| z | 1 | 11 | 11 | 5 |
| ¢ | H | NH | NW | $>$ |
| t | 0 | 06 | $\checkmark 6$ | $b$ |
| y | 11 |  | $43+c$ | ${ }^{3}$ |
| k | コナ | $y 3$ | yyy Js | $5 J$ |
| 1 | 4 | 3 b | ל 61 | 1 |
| m | עכ | 13 | りサロ。 | $\bigcirc$ |
| n | J | $J$ J | 」ノ | 」 |
| s | 〕 $\nabla$ | $y$ y | \％ |  |
| ， | $y$ | $y$ y | y $y+x$ x | 4 |
| p | 19 | 3 | 992 | 9 |
| s | ر | 5 | $\rho$ | $\rho$ |
| q | $\Gamma P$ | $\pi \square$ | rpgq | e |
| r | 4 | 4 4 | 445 | J |
| s | F $V$ | と ヒ | と上上 | $w$ |
|  | $\mathrm{h} \pi$ |  | の | J |

a．Col．XVII，Hebrew square script；col．XVIII，Palmyrene script；col．XIX，Nabatean script；
Figure 3．Chart of Semitic scripts from Haarmann 1990，showing Nabataean．

ALPHABETS ARAMÉENS COMPARÉS．
（arbáén ancien，palmybénien，nabatéen．）

| valecr． | aramérsancien． |  |  | parmyekiles． | mabatéen． |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | vin＇simacre． | vi＇sì̇cıs． | tr sticler． |  |  |
| ， | $\neq$ | $\ldots$ | 4 | $火$ |  |
| b | 9 | $y$ | ， | y | د |
| g | $\wedge$ | $\wedge$ | 1 | $\lambda$ | $\lambda$ |
| d | 4 | 4 | Y | 4 | 1 |
| h | ヲ | 7 | ＊ | $x$ | 10 |
| w | Y | $\dagger$ | 1 | $?$ | 19 |
| ${ }^{2}$ | I | 21 | 1 | 1 | 1 |
| $\xrightarrow{4}$ | 月 | H | \＃ | H | fr |
| t | © | 6 | 0 | 6 | $b$ |
| y | $z$ | $z$ | 1 | $\bigcirc$ | 39 |
| k | － | 4 | y | y | 99 |
| 1 | L | L | 1 | y | b） |
| ${ }^{m}$ | 乡 | 4 | \％ | 3 | 90 |
| n | $\zeta$ | $\dagger$ | ） | si | 11 |
| s | 手 | 交 | 3 | y | $\bigcirc$ |
| ． | － | $\bigcirc$ | $\checkmark$ | 4 | $y$ |
| f | 7 | 1 | ， | 3 | 39 |
| $\stackrel{\square}{9}$ | p | $\mu$ | p | ${ }^{H}$ | $\boldsymbol{r}$ |
| $\stackrel{1}{ }$ | $\phi$ | $p$ | $p$ | g | $\rho$ |
| r | 4 | 4 | Y | 9 | 1 |
| s | w | V | $\nu$ | ＊ | F |
| $t$ | $x$ | $\uparrow$ | r | $ヶ$ | 几n |

Figure 4．Chart of＂Aramaic alphabets＂from Ballhorn 1864，showing Nabataean．

## texte nabatéen．

Épitaphe de lian 26 de notre ère，
àmedaïn－saleh（hedjra）．
pour lui－même，de Waalan fils，le médecin Kahlan a fait que le tombeau Ceci est
 ytyaw mle de kdṣab kdṣa hrhaw hdlyw et est ；toujours jusque en héritier d＇héritier et sa postérité et pour ses enfants
 aršwdl mrḥm yd amrh tkylḥk mrḥ̂ hnd arbk à Dusarès consacré qui est du sanctuaire à la façon un sanctuaire ce tombeau
 ne que et héritier parent homme tout Pour ．et chez les Salamiens en Nabatène
 roi，d＇Harétat et cinq trente del＇an Iyar Au mois ．ce tombeau il vende

Figure 5．Sample text in Nabataean from Fossey 1948．Transcribed with blue letters and red final letters， and given again below without colouring．There has been some difference of opinion as to the $J_{\text {LAMEDH }}$ and $b$ FINAL LAMEDH characters，but as this text shows considerable distinction between them，both are proposed for encoding．It is interesting to compare them to the Arabic J LAM and Hebrew ל LAMED．

$$
\begin{aligned}
& \text { Q }
\end{aligned}
$$

$$
\begin{aligned}
& \text { 的 } \\
& \text { 」1 } \\
& \text { TJFפנ }
\end{aligned}
$$

$$
\begin{aligned}
& \text { \& } 7 \text { Fi7 J }
\end{aligned}
$$

S
لـ」ロا
(1) עת לת

 פם لז яם s


Inscription de Pétra

 ות ש

 צנلז
 ס

[^0]Figure 6. Sample of Nabataean text from Christian 1905.

CHART A：INSCRIPTIONS WITH PRECISE OR APPROXIMATE DATING לוח א：כתובות עם תkריך מדויק או קרוב









肌によ וn





 ת ת ת＝F F



 תמחק

 リתノ


Figure 7a．Table of dated Nabataean inscriptions from Yardeni 2000.



 コクJFF





[^1]

Figure 7b. Table of dated Nabataean inscriptions from Yardeni 2000.


Figure 8. Table of Nabataean documents in cursive script from Yardeni 2000.















Figure 9. Table of Nabataean inscriptions with conjectural dating from Yardeni 2000.


Figure 10a. Table of Nabataean graffiti from Yardeni 2000.



Figure 10b. Table of Nabataean graffiti from Yardeni 2000.

TABLE OF NUMERALS


Figure 11. Table of Nabataean numbers. Source unidentified; from an online forum.

## A. Administrative

1. Title

Proposal for encoding the Nabataean script in the SMP of the UCS
2. Requester's name

UC Berkeley Script Encoding Initiative (Universal Scripts Project)
3. Requester type (Member body/Liaison/Individual contribution)

Liaison contribution.
4. Submission date

2010-12-09
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

## Nabataean.

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
40.
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 to the Project Editor of 10646 for publishing the standard?

## Michael Everson.

5b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.).

## Michael Everson.

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 UAX \#44 http://www.unicode.org/reports/tr44/ 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?

## Laîla Nehmé, John Healey.

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? Reference:
See above.

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

## To write the Aramaic language.

4b. Reference
5a. Are the proposed characters in current use by the user community?
Yes.
5b. If YES, where? Reference:
In scholarly publications.
6a. After giving due considerations to the principles in the $\mathrm{P} \& \mathrm{P}$ document must the proposed characters be entirely in the BMP?
No.
6 b . 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)?

Yes.
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?
No.
10b. If YES, is a rationale for its inclusion provided?
10c. If YES, reference
11a. Does the proposal include use of combining characters and/or use of composite sequences?
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? If YES, reference


[^0]:    Inscription de Pétra (lecture rectifiée dans la copie du R. P. Vincent)

[^1]:    
    

