To: UTC and ISO/IEC JTC1/SC2 WG2

Title: Proposal to encode ARABIC LETTER NOON WITH RING ABOVE in the UCS

From: Lorna Priest Evans (SIL International)

Date: 16 February 2024

Reference: <u>L2/19-111</u>

### Summary

This is a proposal for another retroflexed character (retroflexed noon) that is required for the Western Punjabi language. In L2/19-111 the *arnoon* being requested here was mentioned. However, at that point it was not clear the character was required.

This proposal requests the addition of:

లి

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088F;ARABIC LETTER NOON WITH RING ABOVE;Lo;0;AL;;;;;N;;;;;
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(FYI: There is already a character named *rnoon* in Unicode (06BB & ARABIC LETTER RNOON) which is why that character name cannot be used. That character is discussed in this document.)

## Background

The Eastern Punjabi [pan] language of India is spoken by over 34 million [Ethnologue]. The Western Punjabi [pnb] language of Pakistan is spoken by over 65 million [Ethnologue]. The Eastern Punjabi language has a fairly standardized writing system using the Gurmukhi script (literally 'from the mouth of the Guru' [Dyrud, Radloff]. In Pakistan Punjabi speakers tend to be educated in either Urdu or in English. Punjabi in Pakistan is currently more a spoken language as compared to a written or published language. Despite the size of the language group, the language is not yet used as a medium of instruction (Rahman). Thus, the Western Punjabi language in Pakistan has never had a standardized alphabet. The writing system is called the Shahmukhi script (Arabic script with extended characters). Shahmukhi literally 'from the mouth of the Shah' [Dyrud, Radloff].

## The problem

In addition to the *rlam* which was requested and encoded for Western Punjabi [pnb], there is an issue related to *arnoon*.

This character was first brought to the attention of Unicode through a presentation by Malik at the 27<sup>th</sup> Internationalization and Unicode Conference in April 2005. Next, it was discussed in July 2011 in an article titled "Survey of Computational Support for Shahmukhi Script of Punjabi Language"

Malik gives a clear summary of the issues with *arnoon* (sometimes called *rnoon*):

#### 5.1.1. RNOON Problem

In case of RNOON, RNOON is present in all dialects of Punjabi. The problem with RNOON is the determination of its symbolic representation. Six different shapes are being suggested:

1. Plain NOON – let the sound be determined by context. This shape is the same as normal NOON and thus leads to ambiguity.

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- NOON with two vertical dots (*author comment: not in Unicode anyway*) instead of one dot (used by Punjabi Adabi Board). This shape takes too much vertical space and hard to write in words like KAF – KAF context and is also ambiguous with TEY (ـــ).
- NOON with TOAY mark instead of dot ٹ (also used in Sindhi and available in Unicode). This shape is very similar to TTEY ف, especially when it comes at the start and middle of the word.
- 4. NOON with both dot and TOAY mark above ٿ. This shape takes too much vertical space and hard to write in words like KAF KAF context.
- 5. NOON with "kundi" as in Pashto ن . The variation used in this shape is not used for any other character.
- 6. NOON with small circle instead of dot ن. Small circle is new mark not found in Punjabi and Urdu, which, though unambiguous, is unconventional. (Used by Saver International –monthly magazine and Punjabi Science Board)

Mainly four shapes 1, 2, 4 and 6 are being used in different books, periodicals and magazines. *Shape 1* is most widely used because of non availability of any publishing IT solution for Punjabi. *Shape 6* is totally unconventional. Only shape 2 and 4 have historical evidence to be used for RNOON (الله) as these two are found in different Punjabi manuscripts.

If we look at the history of development of Shahmukhi script, there is a tradition to build new characters from already existing characters by putting TOAY ( ال ) mark above it, e.g. TTEH (أل), DDAL ( أل), RREH ( أل) (these sounds are missing in Persian and Arabic scripts and are native to local languages of Subcontinent). Same tradition can also be applied to suggest a character for RNOON (أل).

If we look at DAL ( <sup>2</sup>), ZAL ( <sup>2</sup>) and DDAL ( <sup>3</sup>), these sounds are quite similar but harder from the previous one. A dot is placed to produce slight hard sound and TOAY ( <sup>1</sup>) mark to produce much harder sound. Same is the case with REH ( <sup>1</sup>), ZEH ( <sup>1</sup>) and RREH ( <sup>3</sup>). Similarly, in case of NOONGHUNA (<sup>1</sup>), NOON (<sup>1</sup>) and RNOON (<sup>1</sup>), sound gets harder and harder from first to third character. So we can deduce by analogy that shape 4 should be used to represent RNOON. Also in Hindko, RNOON is written as a combination of NOON ( <sup>1</sup>) and RREH ( <sup>3</sup>). For example, <sup>1</sup>(water) is written as a combination of NOON ( <sup>1</sup>) and RREH ( <sup>3</sup>). For example, <sup>1</sup>(water) is written as <sup>1</sup>, Thus TOAY ( <sup>1</sup>) mark of RREY ( <sup>3</sup>) is placed over NOON ( <sup>1</sup>) to suggest a character for RNOON (<sup>1</sup>). Also this character has historical evidence to be used for RNOON through manuscripts. Acoustic analysis of RNOON [10] also shows that *shape 4* is the best representation of RNOON phoneme. So it is highly recommended that *shape 4* (<sup>1</sup>) should be used for RNOON (<sup>1</sup>).

So, Malik's conclusion was that U+0768 ARABIC LETTER NOON WITH SMALL TAH should be used for *arnoon* in Punjabi, and another solution was never suggested in the author's 2019 proposal for *rlam*. (The same issues are also discussed in Malik's 2011 document *Survey of Computational Support for Shahmukhi Script of Punjabi Language*.)

Each of the solutions above seem to cause confusion in different ways.

To illustrate the problem with U+06BB, one can see in the example below that in medial (and initial) positions U+06BB ( $\overset{\circ}{\sqcup}$ ) and U+0679 ( $\overset{\circ}{\sqcup}$ ) would not be any different in shape. Punjabi does include U+0679 in its character set.



ک + ڻ + ک = کڻک

In addition, people confuse U+0768 ( $\ddagger$ ) with *noon* (U+0646) when followed, or preceded, by *tteh* (U+0679). The red demonstrates the closeness of the dot above for noon and the above and how it gets confused if U+0768 were also used in the orthography:



The Punjabi board in Lahore has been using a symbol for *arnoon* that looks like "noon" ( $\omega$ ) but has a ring instead of a dot. This symbol is already being used in Punjabi books and newspapers. This is solution 6 that Malik discussed as far back as 2005. The reason it was not chosen by him is that it does not exist in Unicode.

Of course, various issues must be discussed related to adding this character. The "ring above" is the same shape as a naskh-style *sukun*. However, in the Nastaliq style, the *sukun* often appears as either an inverted v or a sideways v (rarely as a ring).



In addition, sukun would only be used in borrowed words for Punjabi.

For ARABIC LETTER NOON WITH RING ABOVE the "ring above" should never change to the Nastaliq-style *sukun* shape. It should always appear as a "ring".

In addition, *noon ghunna* followed by *sukun* could not be used because *sukun* indicates lack of a vowel and this character **does** require vowel marks above it.

In general, vowels are not normally written in Punjabi or even in Urdu since it is expected that people will know the word and pronounce it correctly according to the context. However, Figure 1b (from a primer) demonstrates that theoretically the character can carry a vowel; thus, this is not a *sukun*. Figure 4 shows running text with a *damma* above.

The Punjabi primer in Figure 1a has a red ARABIC LETTER NOON WITH RING ABOVE. The text following says:

The letter for "arnoon" is used a lot. No word starts with this letter. The name for this letter is "noon lasoiya". The teachers should have students practice this letter in writing and should not mix it up with "noon". The name for this letter should be taught as "arnoon" to the children. Not only reading but practice for writing is very important, too. Our generation is becoming bad at writing therefore we can only overcome the bad writing by practicing writing.

Advices are welcome.

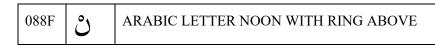
Figure 7 is an example of 4 handwritten words which use *arnoon* with a vowel.

There is ample evidence for the use of this character in various primers and in running text.

Thus, we wish to propose the addition of ARABIC LETTER NOON WITH RING ABOVE in the "Arabic Extended-B" block.

#### Nameslist header with Character information

Addition for Punjabi



#### **Unicode Character Properties**

#### **Properties:**

088F;ARABIC LETTER NOON WITH RING ABOVE;Lo;0;AL;;;;;N;;;;;

**Decomposition:** This character has no decomposition. Someone might suggest a decomposition of U+06BA plus U+0652. However, this does not follow the current Arabic script recommendations in Unicode "Q: How are Arabic letters represented in Unicode?" where it says "As new combinations are attested in language communities, the new letterforms are encoded as a unit in Unicode." In addition, a decomposition to a *sukun* would then prohibit the use of vowel marks above this character.

#### Sorting (allkeys.txt):

This character can sort immediately after U+0768 ARABIC LETTER NOON WITH SMALL TAH

ArabicShaping.txt: This character is dual joining and should be in the NOON shaping group.

088F; DOTLESS NOON WITH SEPARATE RING ABOVE; D; NOON

#### Confusability

This character could be confused with the character sequences of U+06BA U+0652 or U+06BA U+06DF.

# **Figures**

<sup>9</sup> دا اکھر پنجابی دیچ کافی ور تیاجاندااے، انج ایدلفظ دے نٹر ھور پنہیں آوندا، ایہد انال<sup>د</sup> نون لثویا<sup>،</sup> اے۔استاداں نوں ایہد ے بارے دی مشق کرانی چاہیدی اےتے ایہنوں عام'ن' نال نہیں رَلانا چاہیدا۔ بالاں نوں ایس اکھر داساداناں''اڑنون' دسیاجادے۔ پڑھائی دےنال نال ککھائی دی مشق وی بہُت ضروری اے۔ساڈی نویں نسل دن بدن بدخط ہوندی جارہی اے،ایس بدخطی اُتے ککھائی دی مشق کرا کای قابو پایا جاسکد ااے۔ تہاڈے دلوں مشورے تے صلاحواں دی اُڈ یک رہو گی۔ 12:22

Figure 1a. ARABIC LETTER NOON WITH RING ABOVE (Punjabi Primer, inside front cover).

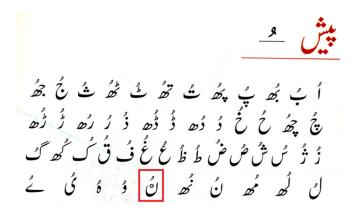


Figure 1b. ARABIC LETTER NOON WITH RING ABOVE (Punjabi Primer, p 24).

اوہ زمین توں تیلھا چک کے گورستان دی میٹی کھوتر ن لگ پیا۔ علیا تھی لے کے سا<mark>ہم</mark> ی بہ گیا۔ باؤر حما' باؤ داپُتر تی ۔ ایس واسط لوک اوہنوں وی باؤای آ کھدے سن ۔ علیا' فقیر داپُتر تی تے گورستان د ے کول ای دارے دی دُھونی د ے کول بقی ہوئی کڑھ وچ ای جمیا پلیا تی ۔ باؤا جے دے پیو باؤ داپک مکان تی ۔ پر جدوں علیا فقیر تے باؤا حما سکول وچ پئے تے انج یار بن گئے جو یں مُڈھ قد یم توں بیل ہوندے سن ۔ باؤا جے دی دادی ہوڑ دی رہندی تے دوہاں نوں اکٹھیاں کھیڈ دیاں و کیھ کے علیے فقیر نوں مہتا دے کہ ایو دادی ہوڑ دی رہندی تے دوہاں نوں اکٹھیاں کھیڈ دیاں و کیھ کے علیے فقیر نوں میتا دے کے ایہ وی کہندی ...... ذوات دی کوڑھ رکر لی تے شہتر ان نوں جھیے ۔.... پر ایہناں مہتی یاں نال نہ تے کدی علیے د ے دل وچ میل آئی' نہ باؤا جے نے کدی ایہ سو چیا کہ علیے دی یاری چھڈ دیٹی چا ہیدی اے ۔ اوہ جدوں وی دارے دوچ ہی کہ نہ باؤا جو نے کر کی تے دوہاں نوں اکٹھیں کھیڈ دیاں و کی کے علیے فقیر مہتیں نال نہ تے کدی علیے د ے دل وچ میل آئی' نہ باؤا جو نے کری ایہ سو چیا کہ علیے دی یاری چھڈ دیٹی چا ہیدی اے ۔ اوہ جدوں وی دارے دوچ ہی پنچد اعلیا این شقی میں تازی کر کے تے دی باری کہ تر کی کہ کے علیے دی یاری دھونی توں اگ رکھ کے گورستان وچ آ جاندا۔ ایتھے علیا جدوں کُلی نوں چنگی طرحاں بھی دی بار دی کہ دی وی ان رہوں ا

Figure 2. ARABIC LETTER NOON WITH RING ABOVE (Baqir, p. 12).

اد**ھوری کہائی** دا فا**صلا** ہوندااے

جیوں جیوں دنیاوچ لوکاں دی تھیڑ ودھر ہی اے ٗ آ دمی ا پیچ آ پ نوں ہور دی اِکلامحسوں کر رہیا اے ۔ جدید دور دِیاں سہولتاں جیوں جیوں انسان دے قریب آ ئیاں نیں ' من داسکون دُور ہو گیا اے ۔ ایہ ورتا رائیچیلی اِک صدی وچ بہت تیزی نال ودھیا ہے۔ انسان بھاویں ایس جہان داسبھانوں <mark>سیانا</mark> جیوا ہے جو محصون تے سمجھاون دے قابل اے پرادہ رہندا دُکھی اے ۔ مسلسل سُکھ دی بھال کردا اے تے سُکھ بھالدیاں بھالدیاں ہور دُکھی ہو جاندا اے .....

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Figure 3. ARABIC LETTER NOON WITH RING ABOVE (Chaalip, p. 8).

الله سبط تول اہم كل ايد كم الفت تر تيب دين وا متعد بنجابى دے يد حياران لئى اك اجی افت تیار کرنا ی جمدے راہی اوہ کلایک اوب دی کوئی کتاب یر حدیاں کے لفظ دے متن الممت جاہون تال لیم سکو. ایمو کارن اے کہ سے مختر رکھ کے نیس تے ب لوژ وروے دین توں پر میز کیتا کیا اے. جن الی افت درج سم دی کوئی اونتائی یاں تموژ و یکمن مال اک خط لکھ ے ترتیب کار نول ضرور ایسے تول جائو کردان آل ب اللے ایڈیشن دیج سودھی

Figure 4. ARABIC LETTER NOON WITH RING ABOVE (*Jameel Ahmad Paal, p. 8*). Orange highlight is *arnoon* with *damma* above.



Figure 5. ARABIC LETTER NOON WITH RING ABOVE (Daily Lokai).

وَدْي مرك أت اوب بس جمر دتى. سايس مغلال دے باغ دى ككر ى، اوب ويكھيا كندھ توں اُ مَانِيهِ نُوْلِ نَكْلُدا ' نِكَاجِنَا بُرْجٍ بَمِيشُ وانْكُولِ اجْ وِي خَالَ سِ. كدى كے زمانے وج جدول دُنيا دے ايس توٹ أتے تيمور دے خانوادے دا آ كھيا تميا چاندا مونا اے ایس بڑج وانگوں' باغ دی ہر تنگر اُتے تے کندھ دچ تھاں تھاں 🕂 ڈوج بڑجاں دچ شینہ ورگے جوان تیر کماناں' تکواراں' ڈھالاں نال لڈے' رنگدار کڑ کدیاں پگاں نال سر ڈھک کے باہر' ڈور ڈور تائیں' شکرے دیاں ہشیار اکھال نال پیرا دیندے ہوئے نیں تال بے بادشاہ سلامت ، ملکا زمانی ، صوب دار صوب دارئی شاہ زادے 'شاہ زادیاں' وزیر زادے تے وزیر زادیاں ' اوہناں دے سکی ساتھی تے شاہی روبنیاں دی سیر موج میلے یاں مینا بازار وچ کوئی ان چاہیا نہ آ و ڑے ، ادبنے سوچیا "اد ہنان زمانیاں دچ تان الیضے چار چُفیرے بیلا ای ہوندا ہونا اے یاں مالیاں دی وتن ..... باغ بان يورا.... شهر جنون ادہناں زمانیاں وج شہر جانی<mark>ا</mark> جاندا ہودے گا' تاں ایتھوں گھٹو گھٹ ست آٹھ میں ڈور اے • " " پیار انارکلی دا با ژا اے چٹرا شیخو دے نور جمان نال دیاہ کرن نال ہور ڈو تکھا ہو جاندا اے ' ہور کھلر دا اے تے ہولی ہولی سارے جمان نُول ایٹ کلادے وچ لے لیندا اے . " ادہنوں سوچ دی لہرنے ذرا کُو بلاردتا.

Figure 6. ARABIC LETTER NOON WITH RING ABOVE (Meer Tanha Yusfi, p. 7).

believe waters Knows Count

Figure 7. Words using ARABIC LETTER NOON WITH RING ABOVE plus vowel mark..

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Daily LOKAI Lahore Aziz Manzil, 129 Hamza Town, 19th KM Ferozapur Road, Lahore, Cell: 0300 4905846 email: lokaai.daily@gmail.com

No: 212/Asm/s/1 Dated: 25/1/2024

# TO WHOM IT MAY CONCERN

We hereby certify that the character of "aRnoon" is an important character of Punjabi Script (Shahmukhi). Various shapes have been introduced for it but except one, all of them are confusing, ugly and assymetrical.

We strongly support and recommend the shape of (....)

& Hanl

Jameel Ahmad Paul Managing Editor

Figure 8. Letter of support.

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Institute Punjabi انسٹیٹیوٹآفلینگوایجنفوکلوراینڈ ینچاہے ہیر یٹیج ک Languages Herit Folklore TO WHOM IT MAY CONCERN It is solemnly declare that the matter of aRnoon in Punjabi script was minutely analysed by the linguistic and script experts of the Institute of Languages, Folklore and Punjabi Heretage, Lahore. In comparison to the 🖸 and 🖯 the shape 🕑 proposed by the Science Board of Punjabi is found the best option. It is also added that the Institute is using 🙂 as aRnoon voice in its books and periodicles since long. ILYAS GHUMMAN (President) January 06,2024 Languages, Folklore Lahore and Punjabi Heretage 24-Ameer Road, Blal Gunj, Lahore Phone# +92 333 4358387

Figure 9. Letter of support.

24 Ameer Road, Bilal Gunj Lahore.

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ISO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS 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://std.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://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html.					
See also http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest <i>Roadmaps</i> . A. Administrative					
1. Title:	Proposal to encode ARABIC LE	TTER NOON WITH RING	AROVE in the UCS		
2. Requester's nar		Lorna Evans			
3. Requester type (Member body/Liaison/Individual contribution): Individual contribution					
4. Submission date: 16 February 2024					
5. Requester's refe	5. Requester's reference (if applicable): N/A				
6. Choose one of the following:					
	This is a complete proposal: Yes				
(or) More information will be provided later:			No		
B. Technical – General					
1. Choose one of					
	bosal is for a new script (set of characters):		No		
	posed name of script:	<i>N/A</i>			
	osal is for addition of character(s) to an existing	ng block:	Yes		
		Arabic Extended-B (if po	ossible)		
	racters in proposal: ory (select one from below - see section 2.2 of	D&P document):	<i>1</i>		
	ary <b>EXAMPLE</b> B.1-Specialized (small collection		rge collection)		
C-Major extin		E-Minor extinct			
	roglyphic or Ideographic	G-Obscure or questionable	usage symbols		
	ncluding character names provided?	<b>1</b>	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 c	character shapes attached in a legible form suit	able for review?	Yes		
5. Fonts related:					
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?					
Lorna Evans, SIL International					
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): <i>Open Font License</i>					
6. References:	Open				
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?					
b. Are published examples of use (such as samples from newspapers, magazines, or other sources)					
		Yes			
7. Special encodin	ng issues:				
Does the proposal address other aspects of character data processing (if applicable) such as input,					
presentation	n, sorting, searching, indexing, transliteration		on)? Yes		
Q A dditi 1 T C		proposal			
8. Additional Info		ut Properties of the proposed Char	acter(s) or Script that will acciet		
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					
( <u>http://www.unicode.org/reports/tr44/</u> ) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.					
Unicode Technica	a Committee for inclusion in the Unicode Star	idara.			

<sup>&</sup>lt;sup>1</sup> Form number: N4502-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, 2011-03, 2012-01)

C. Technical - Justification	
1. Has this proposal for addition of character(s) been submitted before?	No
If YES explain	
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.)?	Yes
If YES, with whom? See proposal and letters of support. Also Farooq Bajwa (Pur	abi activist)
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?	Yes
Reference: See proposal.	
4 The context of use for the proposed characters (type of use: common or rare)	Yes
Reference: See proposal.	
5. Are the proposed characters in current use by the user community?	Yes
If YES, where? Reference: See proposal.	
6. After giving due considerations to the principles in the P&P document must the proposed characters be en	tirely
in the BMP?	Yes
If YES, is a rationale provided?	
If YES, reference: If possible since the character is in modern us	se.
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	N/A
8. Can any of the proposed characters be considered a presentation form of an existing	
character or character sequence?	Yes
If YES, is a rationale for its inclusion provided?	
If YES, reference: Discussed in proposal	
9. Can any of the proposed characters be encoded using a composed character sequence of either	
existing characters or other proposed characters?	Yes
If YES, is a rationale for its inclusion provided?	Yes
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function)	
to, or could be confused with, an existing character?	Yes
If YES, is a rationale for its inclusion provided?	
If VEC	
11. Does the proposal include use of combining characters and/or use of composite sequences?	No
If YES, is a rationale for such use provided?	110
If VES_reference	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	
IS VEC	
12. Does the proposal contain characters with any special properties such as	
control function or similar semantics?	No
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility characters?	No
If YES, are the equivalent corresponding unified ideographic characters identified?	110
If YES, reference:	