

Date/Time: Tuesday, July 22, 2003 6:05 am  
Contact: tvs@hawaii.edu (Ted Shaneyfelt)  
Unicode Technical Committee  
Title: Horizontal Arrows with Tips Vertical

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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 \*  
\* Please fill all the sections A, B and C below. \*  
\* \*  
\* (Please read Principles and Procedures Document for guidelines and details \*  
\* before filling this form.) \*  
\* See http://www.dkuug.dk/JTC1/WG2/docs/summaryform.html for latest Form. \*  
\* See http://www.dkuug.dk/JTC1/WG2/docs/principles.html for latest Principles \*  
\* and Procedures document. \*  
\* See http://www.dkuug.dk/JTC1/WG2/docs/roadmaps.html for latest roadmaps. \*  
\* \*  
\*(Form number: N2352-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04,\*  
\* 1996-08, 1999-03, 2001-05, 2001-09) \*  
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A. Administrative

- 1. Title: HORIZONTAL ARROWS WITH TIPS VERTICAL
- 2. Requester's name: TED SHANEYFELT, UTC
- 3. Requester type (Member body/Liaison/Individual contribution):  
INDIVIDUAL/LIAISON
- 4. Submission date: JULY 23 2003 SYDNEY TIME (MARCH 15 2003 HAWAII TIME ORIGINAL)
- 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: ON REQUEST  
1+808-974-7332

B. Technical - General

- 1. (Choose one of the following:)
  - a. This proposal is for a new script (set of characters):  
Proposed name of script:
  - b. The proposal is for addition of character(s) to an existing block: YES  
Name of the existing block: MISCELLANEOUS TECHNICAL
- 2. Number of characters in proposal: 4
- 3. Proposed category (see section II, Character Categories): ARROWS
- 4. Proposed Level of Implementation (1, 2 or 3)  
(see clause 14, ISO/IEC 10646-1: 2000):  
Is a rationale provided for the choice? N/A  
If Yes, reference:
- 5. Is a repertoire including character names provided? YES
  - a. If YES, are the names in accordance with the  
'character naming guidelines in Annex L of ISO/IEC 10646-1: 2000? YES
  - b. Are the character shapes attached in a legible form suitable  
for review? N/A
- 6. Who will provide the appropriate computerized font (ordered preference:  
True Type, or PostScript format) for publishing the standard?

ROTATE EXISTING GLYPHS

If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

7. References:

- a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? N/A
- b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? N/A

8. Special encoding issues:

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)? N/A

9. Additional Information:

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 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.

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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.)? N/A  
If YES, with whom? N/A  
If YES, available relevant documents: N/A
- 3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? GENERAL USE  
Reference:
- 4. The context of use for the proposed characters (type of use; common or rare) DIAGRAMS/TABLES  
Reference:
- 5. Are the proposed characters in current use by the user community? UNKNOWN  
If YES, where?  
Reference:
- 6. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP? NO  
If YES, is a rationale provided?  
If YES, reference:
- 7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? PREFERRED
- 8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? NO  
If YES, is a rationale for its inclusion provided? N/A  
If YES, reference: N/A
- 9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? NO  
If YES, is a rationale for its inclusion provided? NO

- If YES, reference: N/A
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character? YES  
 If YES, is a rationale for its inclusion provided? YES  
 If YES, reference: SEE BELOW; THESE COMPLETE A SET OF ARROWS
11. 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  
 If YES, is a rationale for such use provided? N/A  
 If YES, reference: N/A  
 Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? NO  
 If YES, reference: N/A
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) N/A
13. Does the proposal contain any Ideographic compatibility character(s)? NO  
 If YES, is the equivalent corresponding unified ideographic character(s) identified? N/A  
 If YES, reference: N/A

#### BACKGROUND

Unicode provides an overabundance of fancy arrows pointing to the right, but an incomplete set of bent arrows.

#### PROPOSAL

I propose to complete the set of bent arrows  
 RIGHT/LEFT ARROW WITH TIP UPWARDS/DOWNWARDS  
 UPWARDS/DOWNWARDS ARROW WITH TIP RIGHTWARDS/LEFTWARDS  
 by adding the following 4 missing glyphs (completing the set of 8)

The existing properties are:

21B0;UPWARDS ARROW WITH TIP LEFTWARDS;So;0;ON;;;;;N;UP ARROW WITH TIP LEFT;;;;  
 21B1;UPWARDS ARROW WITH TIP RIGHTWARDS;So;0;ON;;;;;N;UP ARROW WITH TIP RIGHT;;;;  
 21B2;DOWNWARDS ARROW WITH TIP LEFTWARDS;So;0;ON;;;;;N;DOWN ARROW WITH TIP LEFT;;;;  
 21B3;DOWNWARDS ARROW WITH TIP RIGHTWARDS;So;0;ON;;;;;N;DOWN ARROW WITH TIP RIGHT;;;;

The names and data file entries for these new arrows should probably be:

23E0;RIGHTWARDS ARROW WITH TIP DOWNWARDS;So;0;ON;;;;;N;;;;;  
 23E1;RIGHTWARDS ARROW WITH TIP UPWARDS;So;0;ON;;;;;N;;;;;  
 23E2;LEFTWARDS ARROW WITH TIP DOWNWARDS;So;0;ON;;;;;N;;;;;  
 23E3;LEFTWARDS ARROW WITH TIP UPWARDS;So;0;ON;;;;;N;;;;;

The committee should pick 4 contiguous codepoints after U+23D1 in the "Miscellaneous Technical" block if these 4 codepoints are problematic.

#### AQUIRING GLYPHS

The rotated forms of these characters already exist. Asmus Freytag also has already made a font that contains the required glyphs, so they are already provided and appear in WG2 document N2623.

**RATIONALE**

The "Arrows" block is full. I would suggest therefore, the committee pick 4 contiguous codepoints after U+23D1 in the "Miscellaneous Technical" block, as Rick McGowan of Unicode advised me.

(NOTE: The RIGHTWARDS ARROW WITH TIP DOWNWARDS already exists as RIGHTWARDS ARROW WITH CORNER DOWNWARDS, but you may prefer to add it as well, since you duplicated the DOWNWARDS ARROW WITH TIP LEFTWARDS as DOWNWARDS ARROW WITH CORNER LEFTWARD)

END OF PROPOSAL.