

ISO/IEC JTC 1/SC 2/WG 2  
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSION  
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://www.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://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.  
See also <http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title: Proposal for the Addition of Two Mathematical Bracket Characters  
2. Requester's name: Unicode/USA NB (contact: Asmus Freytag, Barbara Beeton, Murray Sargent)  
3. Requester type (Member body/Liaison/Individual contribution): NB and Liaison Contribution for AMD3I  
4. Submission date: 2/9/06  
5. Requester's reference (if applicable): based on L2/06-054  
6. Choose one of the following:  
This is a complete proposal: Yes  
(or) More information will be provided later:

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:  
Name of the existing block: Miscellaneous Symbols and Arrows  
2. Number of characters in proposal: 2  
3. Proposed category (select one from below - see section 2.2 of P&P document):  
A-Contemporary A 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  
4. Proposed Level of Implementation (1, 2 or 3) (see Annex K in P&P document): 1  
Is a rationale provided for the choice? no  
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 P&P document? yes  
b. Are the character shapes attached in a legible form suitable for review? yes  
6. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for  
publishing the standard? Available to editor  
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? STIX collection  
b. Are published examples of use (such as samples from newspapers, magazines, or other sources)  
of proposed characters attached?  
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)? no

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 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 <http://www.unicode.org/Public/UNIDATA/UCD.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

<sup>1</sup> Form number: N3002-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)

**C. Technical - Justification**

1. Has this proposal for addition of character(s) been submitted before? If YES explain	<i>no</i>
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.)? If YES, with whom? If YES, available relevant documents:	<i>yes</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	<i>No</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	<i>mathematic</i>
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	<i>yes</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	<i>yes</i> <i>No</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	<i>Yes</i>
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>No</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>No</i>
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>Yes</i> <i>Yes</i> <i>Attached</i>
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:	<i>No</i>
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	<i>No</i>
13. Does the proposal contain any Ideographic compatibility character(s)? If YES, is the equivalent corresponding unified ideographic character(s) identified? If YES, reference:	<i>No</i>

## Proposal

The following characters are proposed for addition to AMD 3

U+27EC 〔 MATHEMATICAL LEFT WHITE TORTOISE SHELL BRACKET

→ U+3018 left white tortoise shell bracket

→ U+2997 left black tortoise shell bracket

U+27ED 〕 MATHEMATICAL RIGHT WHITE TORTOISE SHELL BRACKET

→ U+3019 right white tortoise shell bracket

→ U+2998 right black tortoise shell bracket

## Rationale and Background

The proposed characters are analogous to other such characters in the same block. Unlike the similar characters in the CJK Punctuation block, which reside in the right or left half of their display cell, the mathematical characters do not carry additional whitespace as part of their glyph. In a mathematical context, they would be formatted to grow in size according to the expression they delimit.

The proposed characters are in the STIX collection of mathematical characters which is the source set for additions to the mathematical characters in previous versions of the standard. In the STIX collection their source is listed as the ISOTECH entity set., which is a set that Unicode attempts to cover. They had been inadvertently omitted from previous proposals, but were found as part of the review of the STIX collection against pending additions for Unicode 5.0.

## Urgency

Their addition is in some ways urgent, because a font commissioned based on the STIX collection is about to be released, which would effectively freeze the choice of preferred code point for the character with all attendant problems if the characters remained unified with CJK punctuation.

## Completeness of Proposal

The STIX collection does not contain any reference to the last remaining sets of CJK brackets that do not have a non-CJK counterpart (lenticular brackets at 3010, 3011, 3016 and 3017). These are currently not attested as required for mathematical use and are therefore not proposed here.