ISO/TC97/SC22
Languages
Secretariat: CANADA (SCC)

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ACTION: FOR information to SC22 Member Bodies.

MINUTES OF MEETING OF
ISO/TC 97/SC 22/WG 11

Place: Skyway Hotel
                Bath Road, Hayes, Middlesex, UK

Date: May 5-7, 1987

Attendees: Mr. Ted Conwell, ANSI (US)
                Mr. Julian R. Gallop, BSI (UK)
                Mr. David Joslin, BSI (UK)
                Mr. Ken Meyer, BSI (UK)
                Mr. Donald F. Nelson, Convenor (US)
                Mr. Willem F. Wakker, NNI (Neth)

1. Approval of agenda

    The agenda was approved as submitted.

2. Approval of convenor report

3. National Activity Report

    a. BSI IST/5/11

        There was no additional information to report.

    b. ANSI X3T2

        ANSI X2T2 had a meeting on April 21 to 23. No special
        direction was given to us. Two additional documents were sent
        to us (N 33 and N34), but they have no direct impact on our
        actions.

    c. AFNOR/CG 97/CN 22/GE 11

        A letter was received (N39), but no other report was
        submitted.

4. Work Item 22.14 - Language Bindings Guidelines

    a. WG 11 N12 - BSI comments

        All comments were discussed and several recommended changes
        were made to the guidelines. A reply will be sent to BSI
        after the WG 11 members review the responses.

    b. WG 11 N18 - ANSI comments

        All comments were discussed and several recommended changes
        were made to the guidelines. A reply will be sent to ANSI
        after the WG 11 members review the responses.

    c. WG 11 N19 - AFNOR comments

All comments were discussed and several recommended changes were made to the guidelines. A reply will be sent to AFNOR after the WG 11 members review the responses.

    d.   WG 11 N32 - Additional AFNOR comments

The comments were noted.

    e.   A summary of the changes to the Guidelines will be written by Mr. Nelson and sent to all WG 11 members for review. If the changes are correct, they will be incorporated into a new Guidelines document and it will be submitted to SC 22 as a Technical Report.

5.   Work Item 22.16 - Common Procedure Calling Mechanism

    a.   WG 11 N30 & N31 - ANSI letter ballot on the subject

    b.   A prototype mechanism was invented at the meeting (primarily by Mr. Joslin). This consists of a call to a mapping routine that maps the parameters into a common set of data types (see item 6 below). Another mapping routine then maps the data from the common data types into the types for the language being called, and then invokes the called routine. Obviously, if the system is clever enough some or all of this mapping can be done more directly. The form of the call is:

```
CALL ALIEN (language, procedure, procedure-descriptior,
            error-return, number-of-parameters,
            {param-1, param-1-descriptor} ...)
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procedure-descriptor tells whether it is a procedure or function and the result type for a function.
param-descriptor tells if it is IN, OUT, or IN/OUT, type of element, if it is an array or pointer, and number of dimensions for an array. If the language is enhanced this may not be necessary (the compiler can automatically provide the information).

The WG feels that this mechanism will work for local and remote procedure calls.

The attendees at the meeting are to prepare example syntax for the calling routine for COBOL, FORTRAN, Pascal, and Ada. WG 11 will circulate these among the members for comment, then to various language groups for comment, and will then proceed to create a more formal specification at the next meeting.

6.   Work Item 22.17 - Common Data Types

    a.   WG 11 N5 - Pascal data types

    b.   WG 11 N21 - Brian Meek comments - pages 3 through 5

c.   WG 11 N28 - ANSI X3T2 news release

d.   WG 11 N29 - FORTRAN 8x data types

e.   After a review of the various suggestions and documents, the
     Group decided upon a small set of simple data types.
     They are the following:

    a.   BIT(n)   Bit-string n bits long
    b.   CHARACTER(n)   ISO Standard character string n
                             characters long
    c.   FIXED(n,s)   Fixed-point number, max (10**n) - 1,
                             scale s (negative implies right
                             scaling or implied zeros on the right)
    d.   FLOAT(n,s)   Signed string of n decimal digits with
                             an implicit decimal point to the left
                             of the string, multiplied by 10 to an
                             exponent that is a signed string of s
                             decimal digits
    e.   LONGCHAR(n)   Character string, each character 16
                             bits long, string is n characters long
    f.   ARRAY [d1,d2,...,dn] OF simple-type An array of one of the
                             above simple types (a thru e). The
                             number of elements in each dimension
                             are given by d1...dn. The array is
                             laid out with the last subscript
                             varying most rapidly (like COBOL and
                             Pascal, not like FORTRAN).

    A more detailed paper on these types is being circulated among
    WG 11 members and will be given more general distrubution
    later.

7.   Other business

    Our liaison mechanism does not seem to be working. The language
    committees show no interest in reviewing the bindings to their
    languages for the various graphics standards. Mr. Nelson will
    attempt to contact the language committee convenors directly in
    order to resolve this.

8.   Meeting schedule

    October 27-29 1987 - Kansas City, Missouri, USA, (in conjuction
                         with ANSI X3T2) - host Mr. Conwell

    April 19-21 1988 -   Middlesbrough, Cleveland, England - host Mr.
                         Joslin