Building the Millennium Standard
or . . . "$REFERENCE" Controversy Resolved"

The MUMPS Development Committee meets several times in a year to discuss proposals to enhance the M Technology ANSI standards, including the M Language standard. The MDC last met in March and plans to meet again in June 1998. Several M Computing *readers who were not able to attend the MDC meetings are, nevertheless, interested in some of the specifics of these proposals. We'll try to, very briefly, describe a few of them in this column in each issue of* M Computing.

The MUMPS Development Committee plans to begin the canvass process in September 1998 to revise several of the current M Technology ANSI standards. If you would like to participate in the canvass process to seek ANSI approval, contact the MDC Secretariat at the MTA office to be put on the preliminary canvass list.

An MDC Type A proposal is one that will be included in the next revised version of the MDC standard document. The MDC standard is the draft standard that will be canvassed for ANSI approval as a revision of the current ANSI standard document.

This is a brief summary of one of the recent proposals that the MDC has passed to MDC Type A status. Not all the sections of the proposal, or the formalization of the actual changes proposed for the current ANSI standard, have been included.

"$REFERENCE proposal", document X11/93-39.

Justification of the proposed change:
If you use naked references in your software programming, you know that referring to a *different* global variable, and then reverting to the *main stream* of your program, may cause problems. This reference to the *different* global variable will invalidate the value of the naked indicator, and probably cause execution errors in later phases of the program. This proposal introduces a new intrinsic special variable that can be used to save and restore the value of the naked indicator.

Existing practice in the area of the proposed change:
Currently, one way to get at the value of the naked indicator is through the special function `$NAME`, but this method is rather cumbersome. At least one implementation of M allows an intrinsic special variable name (`svn`) to be referenced and set to a value, thus obtaining and redefining the value of the naked indicator.

General description of the proposed change:
This proposal introduces the new intrinsic special variable, `$REFERENCE`, that returns the name value of the most recently referenced global variable name (`gvn`). `$REFERENCE` may also be `SET` to a new value, so you can redefine the value of the naked indicator without referencing a global variable.

Example of the use of the proposed change:
Consider the following piece of MUMPS code:

```
            ...
            DO SAVNAK
            ...
            DO RESTNAK
            ...
            QUIT
            ;
SAVNAK      SET OLD=$REFERENCE QUIT
RESTNAK     SET $REFERENCE=OLD QUIT
```

The code at label `SAVNAK` saves the value of the gvn that was most recently referenced, in the variable `OLD`. Note that a reference to a name does not automatically mean that the associated variable exists or has a value. The code at label `RESTNAK` restores the naked indicator to its previous value. Note that setting `$REFERENCE` does not imply that the global variable that it points to is actually referenced, only that the naked indicator is (re)set.

```
...
SET ^X=1 WRITE !,$REFERENCE
SET ^X(1)=2 WRITE !,$REFERENCE
SET $REFERENCE="" WRITE
!,"Naked indicator is undefined."
```

should produce

```
^X
^X(1)
```

Note that a reference to ^X makes the naked indicator undefined, but does not make $REFERENCE empty. The final command, SET $REFERENCE="" makes $REFERENCE empty and also makes the naked indicator undefined.

Impact on existing user practices and investments:
The addition of this intrinsic special variable will help you to maintain software that uses naked references. Its greatest impact is that it offers a simple facility to save and restore the name value that caused the current value of the naked indicator to be established. Note that $REFERENCE returns the full name value, not the truncated naked indicator, so that the value of $REFERENCE can later be used in another reference, without the artifical addition of a final subscript to make syntactically correct code.

"The above MDC specification has been approved by the MUMPS Development Committee but it may be a partial specification that relies on information appearing in many parts of the MDC standard. This specification is dynamic in nature, and the changes reflected by this approved change may not correspond to the latest specification available. Because of the evolutionary nature of MDC specifications, changes are likely to occur in the specification released prior to a complete republication of the MDC standard."

To keep current on all details of the proposals that the MDC is considering you can subscribe to the MDC document mailings through the MTA. A one-year subscription costs $120 plus shipping and handling. **M**