Packaging Standardization

Response to our suggestion of a standard system for packaging logic has been overwhelmingly favorable — both people who contacted me thought it was a neat idea. In hopes of generating and nurturing further interest I'm preparing a summary bulletin on the subject and will send a copy to anyone who asks for it.

Electrical and Mechanical Hardware for Bused Systems

A system has been developed to extend the capabilities of a PDP-11 minicomputer. Its mechanical hardware is also adaptable to other bus oriented systems. The basic bin is of CAMAC size (19” wide x 3-3/4” high x 12” deep) and it incorporates a back plane that is fully compatible with the PDP-11 UNIBUS. In addition, the back plane is wired to carry power for 5 different voltage levels. A bin can hold up to 12 plug-in modules, which may vary in their mechanical dimension to accommodate a wide variety of PC card sizes.

Each plug-in module communicates with the central processor or with other modules via an extension of the PDP-11 Unibus. An interesting feature is the BUS BREAKER that also performs the function of buffer/amplifier. This Bus Breaker isolates, on command, any bin from the Unibus. Communication between modules within each isolated bin may take place simultaneously with the usual Unibus signal traffic. Thus the Bus Breaker allows many parallel operations to take place within the system and a variety of digital functions may be configured to suit specifications of a system.

Several modules have been developed including a dual DMA, a multiplier, an “intelligent” memory having several modes of operation determined by the state of a status register, a “list processor”, and a general purpose MOS memory organized in 2K word x 16 bit cards of 4” x 6-3/4” size. Sixteen memory cards plus 2 control cards in one module provide a 32K word x 16 bit memory.

The mechanical and electronic hardware is easily adaptable to a wide range of applications. For further information contact Len Birkwood, SLAC, Bin 89, P.O. Box 4349, Stanford, Ca. 94305.

“An engineer is someone who does list processing in FORTRAN.”

V. Michael Powers
Naval Postgraduate School, Monterey

This was too good to wait for next year’s Almanack, and besides it serves to introduce the following contribution by said Powers and Allen Durting, University of Florida, Gainesville.

“Organization and Punctuation of Data Strings”

A solution and examples are presented below for the printing of variable-length strings of words in a language such as FORTRAN without format variables. Individual words are separated by punctuation, but the last word is followed by a different symbol.

Data strings are automatically separated into predetermined length elements (words) and punctuated by the brief coding:

\[
\text{EQUIVALENCE } (A,C),(B,C (1,2))
\]

\[
\text{DATA/B/19*1H,1H/}
\]

\[
\text{DATA PER/1H/}
\]

\[
\ldots (\text{Dimension } A \text{ and } C \text{ compatibly. Fill String } A.)
\]

\[
\text{B(K) = PER}
\]

\[
\ldots (\text{Print one punctuated line from } A.)
\]

\[
\text{WRITE } (6,200)((C(I,J),J=1,2)
\]

\[
J=1,K)
\]

200 FORMAT (1H,20(A4,A1))

Example: The list DATA/B/19*
 becomes DATA,B/19,

\[
*1H,,1H/,
\]

becomes CODEH AS . . . . .

\[
\ldots .
\]

becomes HESAKAZE

becomes HESA,KAZE . . .

and

\[
,;
\]

becomes , ; , ; , ! ! !