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- 1 is developed along with the feature's mode
of operation such that the system will
function in the alternate mode when the
feature is not mutually supported.
- 5 3. When the feature is developed, its number
and required/optional information is embedded
in the software and/or microcode for use
during the exchange process.

During the exchange process, one or more bit
10 masks are exchanged. The width of the bit mask is system
dependent but should be as wide as a standard system
"word" minus one bit (Bit0 is reserved as a flag for
indicating when the last mask word has been exchanged).
For example, for system words which are 8 bits wide,
15 7 features can be represented per mask word. Feature
1 is represented by bit1 of Word1, feature2 by bit2 and
so forth.

If the number of features exceeds a system word,
multiple words are used. The feature number (Feature#)
20 can be expressed in terms of the mask word number (Word#)
and bit number in the mask word (Bit#). Feature and
word numbers start at 1. The relationship between these
numbers can be expressed as follows, where B =
BITS_PER_SYSTEM_WORD.

25
$$\text{Feature\#} = (\text{Bit\#} + ((B - 1) \times (\text{Word\#} - 1))).$$

The following equations provide the bit and word
numbers in terms of the feature number.

$$\text{Word\#} = (\text{Feature\#} + (B - 1) - 1) \text{ DIV } (B - 1).$$

$$\text{Bit\#} = \text{Feature\#} - ((B - 1) \times (\text{Word\#} - 1)).$$

30 For example, for systems with 8 bit words, feature
number 22 is represented in Word4, Bit1:

$$\text{Word\#} = (22 + 8 - 1 - 1) \text{ DIV } (8 - 1) = (28/7) = 4.$$

$$\text{Bit\#} = 22 \text{ MOD } (8 - 1) = (22 \text{ MOD } 7) = 1.$$

It is appreciated that the same procedure is
35 utilized for determining word and bit numbers for systems
with the 48 bit words indicated above with respect to
Figure 1.