

# Mantis 3737

## 37.17 Variables

### REPLACE:

- 4) For an array var, **vpi\_iterate(vpiRange, handle)** shall return the set of array range declarations beginning with the leftmost unpacked range and iterating through the rightmost unpacked range. If any dimension of the unpacked array other than the first dimension is a dynamic array, associative array, or queue dimension, the iteration shall return an empty range (see 37.22) for that dimension. For a packed array, the iteration shall return the set of ranges beginning with the leftmost packed range and iterating through the rightmost packed range. The ranges returned for a packed array shall not include the implicit range for packed struct or union var elements themselves, or the range (explicit or implicit) for the base type of enum var elements.

### WITH:

- 4) For an array var, **vpi\_iterate(vpiRange, handle)** shall return the set of array range declarations beginning with the leftmost unpacked range and iterating through the rightmost unpacked range. If any dimension of the unpacked array other than the first dimension is a dynamic array, ~~associative array~~, or queue dimension, the iteration shall return an empty range (see 37.22) for that dimension. ~~The iteration shall also return an empty range for any dimension that is an associative array dimension.~~ For a packed array, the iteration shall return the set of ranges beginning with the leftmost packed range and iterating through the rightmost packed range. The ranges returned for a packed array shall not include the implicit range for packed struct or union var elements themselves, or the range (explicit or implicit) for the base type of enum var elements.

## 37.22 Object Range

### REPLACE:

- 1) An empty range is a range that has no elements. A range corresponding to an empty dynamic array, associative array, or queue is an empty range. A range of a typespec for a dynamic array, associative array, or queue is also an empty range.

### WITH:

- 1) An empty range is a range that has no elements. ~~A range corresponding to an empty dynamic array, associative array, or queue is an empty range. A range of a typespec for a dynamic array, associative array, or queue is also an empty range.~~ An empty range shall be used to represent:

- any range corresponding to an associative array dimension (see 37.17 <ref> detail 4)
- a range corresponding to an empty dynamic array or queue
- any range obtained from a typespec corresponding to a dynamic array, queue, or associative array dimension.

For example:

```
int arr1 [][][string];
initial
begin
    #1 arr1 = new[2];
    #1 arr1[0]["hello"] = 5;
end
```

All ranges obtained from the typespec handle of `arr1` are empty. Also, ranges obtained from the `arr1` object itself at simulation time 0 are all empty, since the array is not sized yet. At times 1 and 2, the first range of `arr1` is `[0:1]` and the second is empty since it corresponds to an associative array dimension.