NAME

cell.res - file for descriptions of logic signals

DESCRIPTION

The file *cell*.res contains descriptions of logic signals as a function of time. Programs that write this file are for example *sls* and *simeye.* Programs that read this file are for example *sls* and *simeye.*

FORMAT

First the scale factor for the time values is printed. Each time value in the file has to be multiplied with this factor in order to obtain the real time value.

Next, on the same line, the signals names are printed. Each signal is enclosed between parentheses. E.g. (signame). When a signal name has an array specification, the name is preceded by a left parenthesis and closed by a right parenthesis, while the array specification directly follows the signal name. For example:

((in (0 6))) denoting in[0..6]
((out 5 (0 7))) denoting out[5,0..7]

When a signal name is preceded by one or more instance names, the instance names are printed in the same format and precede the signal name.

E.g.
((adder 3) in) denoting adder[3].in

The end of the list of signal names is denoted by an end of line character. Furthermore, in this part of the file space characters are optional between all tokens, while they should always be present after a signal name and between two integers.

Next, the signal values are listed. For the different time values on which signals change, the values of all signals are given. Each such a specification occurs on one line, which has a fixed length. First 15 character positions are reserved for printing the time value. The time value should be an integer value and it should be printed right adjusted. Space characters should be used to precede the integer value and to complete the 15 character positions. Directly following the time value, the signal values are printed with values ’h’ for I, ’l’ for O, ’x’ for undefined, and ’.’ for previous value. No spaces should separate these items and they should be followed by an end of line character.

Between two different signal value specifications, the signal is assumed to have the value that was given with the signal specification with the smallest time. The first signal value specification should be for t=0 and there may be more than one value specification for the same time. The signal descriptions are valid until the time of the last value specification.

EXAMPLES

The following .res file is the result of an sls simulation at level 1.

```
1.000000e+000  ( vdd ) ( vss ) ( phi1 ) ( phi2 ) ( in ) ( out )
          0hlhlhx
          1hllhhh
          2hlhlhh
          3hllhhh
          4hlhllh
          5hllhll
          6hlhlll
          7hllhll
          8hlhlhl
          9hllhhh
         10hlhlhh
```

The corresponding .out file is listed below.

```
=====================================================
                       S L S
                    version: 3.0
          S I M U L A T I O N   R E S U L T S
=====================================================
 time         | v v p p i o
 in 1e+00 sec | d s h h n u
              | d s i i   t
              |     1 2
=====================================================
            0 | 1 0 1 0 1 x
            1 | 1 0 0 1 1 1
            2 | 1 0 1 0 1 1
            3 | 1 0 0 1 1 1
            4 | 1 0 1 0 0 1
            5 | 1 0 0 1 0 0
            6 | 1 0 1 0 0 0
            7 | 1 0 0 1 0 0
            8 | 1 0 1 0 1 0
            9 | 1 0 0 1 1 1
           10 | 1 0 1 0 1 1
=====================================================
  network : latch                          nodes : 10
=====================================================
```

The second .res file is the result of an sls simulation at level 3.

```
1.000000e-011  ( phi1 ) ( phi2 ) ( in ) ( out ) ( (inv (1 3)) o )
               0hlhxlhx
            1000lhhxlhx
            1167lhhhlhh
            2000hlhhlhh
            3000lhhhlhh
            4000hllhlhh
            4313hllhhhh
            4357hllhhlh
            5000lhlhhlh
            5274lhllhll
            6000hlllhll
            7000lhllhll
            8000hlhlhll
            8078hlhllll
            8245hlhllhl
            9000lhhllhl
            9167lhhhlhh
           10000hlhhlhh
```

The .out file that belongs to it is given below.

```
=====================================================
                       S L S
                    version: 3.0
          S I M U L A T I O N   R E S U L T S
```

```
=====================================================
 time         | p p i o i i i
 in 1e-09 sec | h h n u n n n
              | i i   t v v v
              | 1 2     * * *
              |         1 2 3
              |         * * *
              |         . . .
              |         o o o
=====================================================
         0.00 | 1 0 1 x 0 1 x
        10.00 | 0 1 1 x 0 1 x
        11.67 | 0 1 1 1 0 1 1
        20.00 | 1 0 1 1 0 1 1
        30.00 | 0 1 1 1 0 1 1
        40.00 | 1 0 0 1 0 1 1
        43.13 | 1 0 0 1 1 1 1
        43.57 | 1 0 0 1 1 0 1
        50.00 | 0 1 0 1 1 0 1
        52.74 | 0 1 0 0 1 0 0
        60.00 | 1 0 0 0 1 0 0
        70.00 | 0 1 0 0 1 0 0
        80.00 | 1 0 1 0 1 0 0
        80.78 | 1 0 1 0 0 0 0
        82.45 | 1 0 1 0 0 1 0
        90.00 | 0 1 1 0 0 1 0
        91.67 | 0 1 1 1 0 1 1
       100.00 | 1 0 1 1 0 1 1
=====================================================
  network : latch                          nodes : 10
=====================================================
```

SEE ALSO

sls(1ICD), simeye(1ICD).