

Mapping Liberty Semantics to ALF

Mapping of Liberty WHENclauses to ALF existence_condition and conditional expressions (?:). Examples:

Multiple WHENs without default, none of the when clauses evaluate to true.

Multiple WHENs with default, none of the when clauses evaluate to true.

Mapping of STAMP conditional arcs (COND) to ALF existence_condition and conditional expressions (?:). For example:

There are two delay arcs from A to Y with identical type and edges, one has a COND expression on it, the other does not. Does it:

A) map to existence_condition: There two arcs, one which can be disabled by a conditional reexpression (TRUE means both arcs exist),

B) map to conditional value: TRUE means take the value from the arc with the COND construct, FALSE means take the value from the arc without the COND construct, UNKOWN means take the worst case delay from the two arcs.

Map Liberty SDF_COND, SDF_COND_BEGIN, SDF_COND_END to ALF label annotation.

Map timing arcs that are supplied in a timing() group, but that are inconsistent with the edge-combinations inferred from the combination of timing_type and timing_sense to ALF equivalents.

For example:

```
timing() {  
  related_pin : "SetN";  
  timing_type : preset;  
  timing_sense : negative_unate;  
  cell_rise(template_7x7) {  
    ...  
  }  
  rise_transition(template_7x7) {  
    ...  
  }  
  cell_fall(template_7x7) {  
    ...  
  }  
  fall_transition(template_7x7) {  
    ...  
  }  
}
```

```

timing() {
  related_pin : "SetN";
  timing_type : clear;
  timing_sense : positive_unate;
  cell_rise(template_7x7)... rise_transition(template_7x7)...
  cell_fall(template_7x7) ... fall_transition(template_7x7) {
    ...
  }
}

```

Map Liberty threshold parameter to ALF equivalents. Liberty documentation pages 2-5 through 2-12 the various threshold parameters:

```

input_threshold_pct_fall
input_threshold_pct_rise
output_threshold_pct_fall
output_threshold_pct_rise
slew_lower_threshold_pct_fall
slew_lower_threshold_pct_rise
slew_upper_threshold_pct_fall
slew_upper_threshold_pct_rise

```

Define exact meaning of equation arguments. For example, for these four possible arguments:

```

total_output_net_capacitance
output_net_pin_cap
related_out_total_output_net_capacitance
related_out_output_net_pin_cap

```

does the value plugged into the equation include the pin's self-capacitance, or not?