

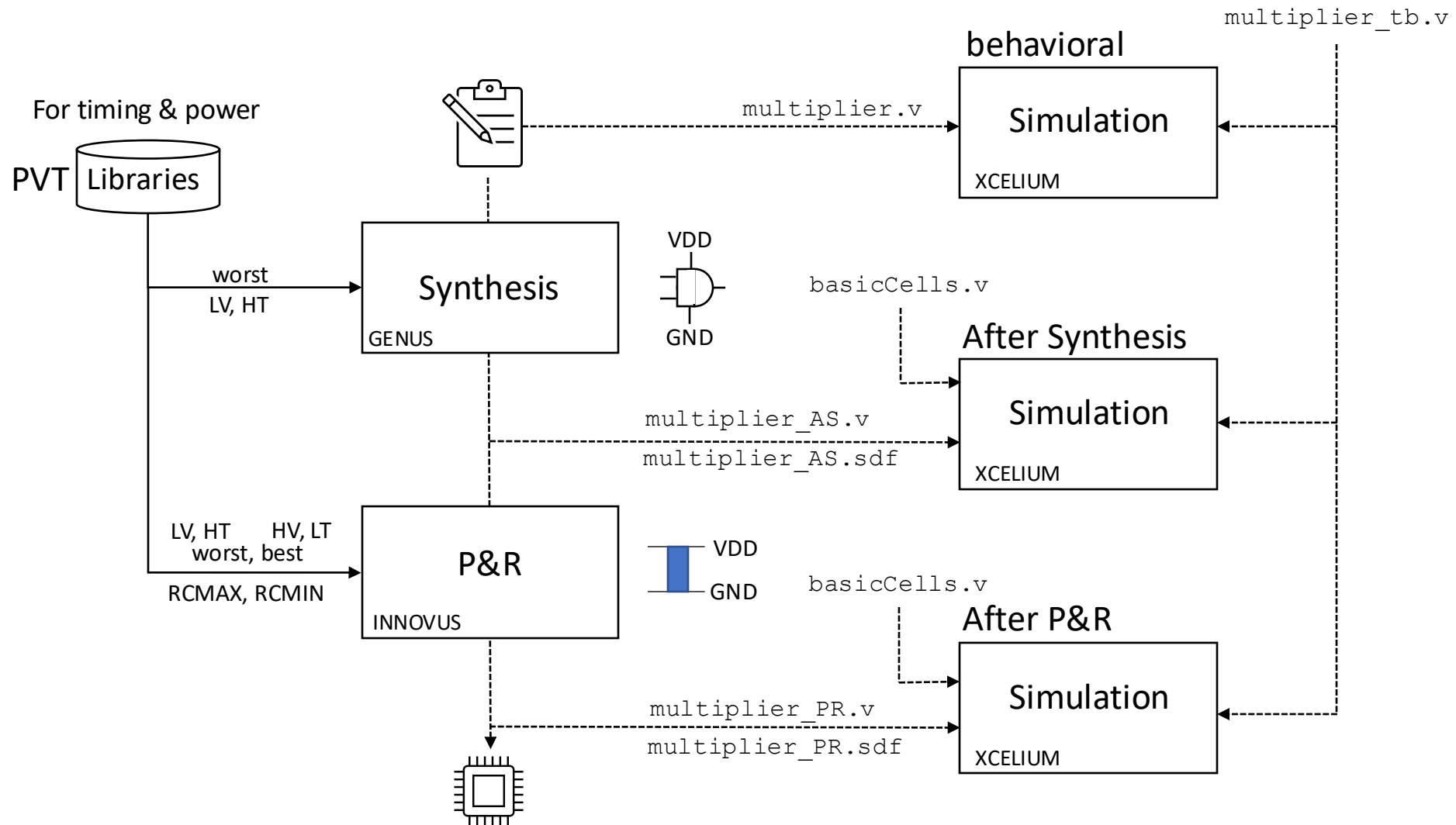


CIN4

Verification Workflow XCELIUM



Verification workflow



Verification workflow

GENUS

```
set_attribute library slow_vdd1v0_basicCells.lib  
  
read_hdl multiplier.v  
  
. . .  
  
write_hdl multiplier > multiplier_AS.v  
write_sdc multiplier > multiplier_AS.sdc  
write_sdf -design multiplier > multiplier_AS.sdf
```

INNOVUS

```
set_init_verilog multiplier_AS.v  
  
. . .  
  
saveNetlist multiplier_PR.v  
write_sdf -recompute_parallel_arcs -view best -max_view worst multiplier_PR.sdf
```

Verification workflow

	Behavioral	After Synthesis	After P&R
xmvlog		basic_cells.v	basic_cells.v
xmvlog	multiplier.v	multiplier_AS.v	multiplier_PR.v
xmvlog	multiplier_tb.v	multiplier_tb.v	multiplier_tb.v
xmsdfc		multiplier_AS.sdf >multiplier.sdf.X	multiplier_PR.sdf >multiplier.sdf.X
xmelab	worklib.test	worklib.test -maxdelays sdf_multi.cmd COMPILED_SDF_FILE = "multiplier.sdf.X", SCOPE = test.dut, LOG_FILE = "sdf.log", MTM_CONTROL = "TOOL_CONTROL";	worklib.test -maxdelays -mindelays
xmsim	worklib.test	worklib.test	worklib.test

Verification workflow

sdf_multi.cmd

```
COMPILED_SDF_FILE = "multiplier.sdf.X",  
SCOPE = test.dut,  
LOG_FILE = "sdf.log",  
MTM_CONTROL = "TOOL_CONTROL";
```

```
xmrm -message -library worklib
```

```
xmvlog -work worklib -cdslib ./cds.lib -logfile ncvlog.log -errormax 15  
-update -linedebug -status ./gsclib045/verilog/slow_vdd1v0_basicCells.v
```

```
xmvlog -work worklib -cdslib ./cds.lib -logfile ncvlog.log -errormax 15  
-update -linedebug -status ../SOCE/infiles/multiplier_AS.v
```

```
xmvlog -work worklib -cdslib ./cds.lib -logfile ncvlog.log -errormax 15  
-update -linedebug -status ./infiles/multiplier_tb.v
```

```
xmsdfc -compile -cdslib ./cds.lib -output ./multiplier.sdf.X -status  
./infiles/multiplier_AS.sdf
```

```
#setup
```

```
xmelab -maxdelays -sdf_cmd_file ./infiles/sdf_multi.cmd -sdf_file multiplier.sdf.X  
-work worklib -cdslib ./cds.lib -logfile ncelab.log -errormax 15 -access +wc  
-novitalaccl -status -v93 -timescale 1ns/1ps -coverage block -coverage expr  
-coverage toggle worklib.test
```

```
xmsim -run -cdslib ./cds.lib -logfile ncsim.log -errormax 15 -covoverwrite  
-status worklib.test
```

Verification workflow

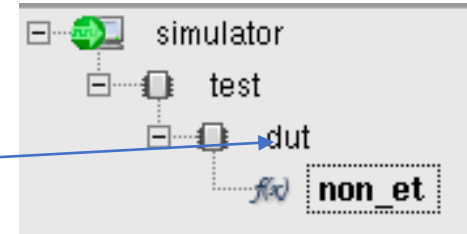
multiplier.v

```
module multiplier(clk, num1, num2, product);  
...  
endmodule
```

tb_multiplier.v

```
module test;  
...  
multiplier dut (  
    .clk(      clk      ),  
    .num1( num1  ),  
    .num2( num2  ),  
    .product( product) );  
...  
endmodule
```

Instance name



Script_simu.tcl

```
xmvlog multiplier.v  
xmvlog tb_multiplier.v  
  
xmelab worklib.test  
  
xmsim worklib.test
```

Elaboration : sdf_multi.cmd

```
COMPILED_SDF_FILE = "multiplier.sdf.X",  
SCOPE = test.dut,  
LOG_FILE = "sdf.log",  
MTM_CONTROL = "TOOL_CONTROL";
```

Verification workflow

multiplier.vhd

```
entity multiplier is
...
end entity;
```

tb_multiplier.vhd

```
entity multiplier_tb;
end multiplier_tb
```

```
architecture test of multiplier_tb is
component multiplier
```

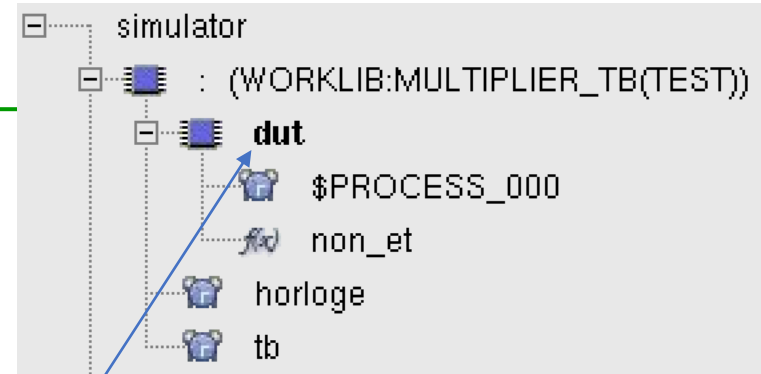
...

```
end component;
```

...

```
begin
```

```
  dut : multiplier port map (
    clk  => clk      ,
    num1 => num1,
    num2 => num2  ),
    product => product);
```



Instance name

Elaboration : scope :dut

script_simu.tcl

```
xmvhdl multiplier.vhd
xmvhdl tb_multiplier.vhd

xmehlab worklib.multiplier_tb

xmsim worklib.multiplier_tb:test
```