

Beacon-VHDL-2008



Comprehensive Test Suite for VHDL-2008 Compliance

Key Advantages

- Backed by Interra's field-proven expertise in developing HDL-based test suites for VHDL and Verilog
- Developed in partnership with significant EDA majors
- Conforming to accepted definition and interpretation of the language
- Providing an unbiased quality analysis of EDA tools
- Some partial and some complete coverage of each of new construct and styles
- Comprehensive validation of syntax, synthesizability, and simulation semantics

Highlights

- Over 2000 test cases along with test benches
- Golden output for comparison
- Detailed test plans with cross-reference to test cases
- Well organized test cases highlighting testing objectives
- Both positive and negative test cases

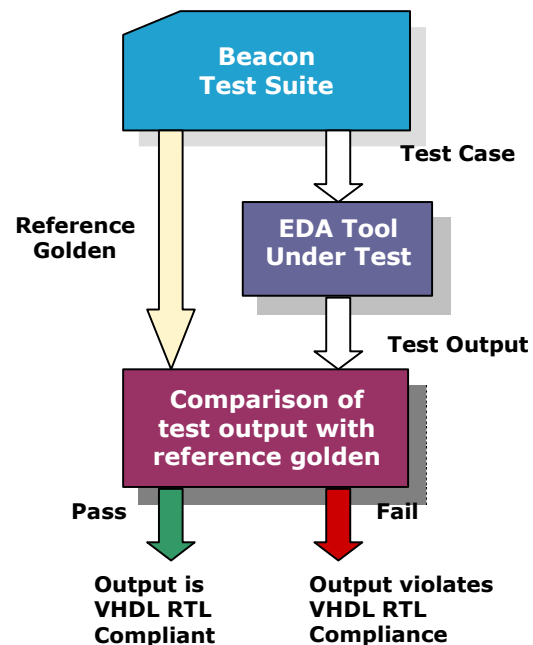
Addressing the needs of EDA tool developers to quickly evaluate the quality of their products, Interra's Beacon-VHDL-2008 delivers a comprehensive test suite based on VHDL IEEE 1076-2008 standards.

You can use Beacon-VHDL-2008 to characterize EDA tools for coverage and quality across various language constructs and styles.

Enabling you to discover language and RTL non-compliance early in the product development and testing life cycle, Beacon-VHDL-2008 offers:

- Reduced development costs and time-to-market EDA products
- Development of standard-based products
- Precise evaluation of bugs and errors in the product
- Measure of product quality
- Unbiased feedback on product quality
- Regression tests for quality assurance

The test cases and test benches can be applied to the EDA tool under evaluation and results can be compared with golden reference that is provided with Beacon-VHDL-2008.



The Beacon-VHDL-2008

Features

Comprehensive Test Suite

Well organized test cases that enable you to evaluate syntax, semantics, synthesizability, and simulation aspects of a VHDL-2008 based tool.

Syntax and Semantics Cover

Includes over 2,000 test cases that cover constructs and styles.

Language Construct	Number of Test Cases
Design Entity and Configuration	94
Subprogram and Package	134
Types	116
Declaration	301
Names	196
Expressions	617
Sequential Statements	228
Concurrent Statements	241
Design Units	21
Predefined Language Environment	161
PSL	14
Lexical Elements	8
Specifications	17
Tool Directive	33
Total	2212

Test Case Covered

Positive test cases with test benches and Negative test cases, Most of the new constructs of VHDL-2008 has been covered, some construct partially and some construct fully.

Well Documented Test Plans

The test plans describe all test objectives and are categorized by sections. Each test case has a reference to the section number of the test plan.

Test Benches and Golden Reference

Provides test benches to instantiate test cases and apply vectors on inputs. Outputs are captured after an appropriate interval and written on to a file. You can easily apply the test bench to the test tool and compare the outputs.

Sample Test Case

```
--** Purpose:      External signal name : The
                   external path is a package path
                   name : Use external name as a
                   prefix : In an expression.
--** LRM :        Sections 8.7
--** TestPlan:    Sections 6.2.2.1.1.1.1
--** Kind :       Semantic
--** Status:      SIMULATION_SHOULD_PASS
```

```
*****
*
package pack is
    signal s1 : bit_vector(0 to 7) :=
"10110011";
    signal s2 : bit_vector(0 to 7) := (others
=> '1');
end package pack;

entity packPathName1 is
    port (in1,in2 : in bit_vector(0 to 7);
          out1 : out bit_vector(0-to 7));
end entity packPathName1;

architecture arch of packPathName1 is
begin
    process(<< signal @work.pack.s2 :
bit_vector(0 to 7)>>, in2)
    begin
        for idx in 0 to 7 loop
            if idx mod 2 = 1 then
                out1(idx) <=
                    << signal @work.pack.s1 :
bit_vector(0 to 7)>>(idx) or
                    << signal @work.pack.s2 :
bit_vector(0 to 7)>>(idx);
            else
                ...
            end if;
        end loop;
    end process;
end architecture arch;
```