

Newsletter

February 2011

VISIT FRACTAL AT DATE 2011

**DATE 2011, booth 11, Grenoble,
March 14-18**

Fractal will participate at DATE. Of course we are showing our latest features for the Crossfire and QAtest product. These features include:

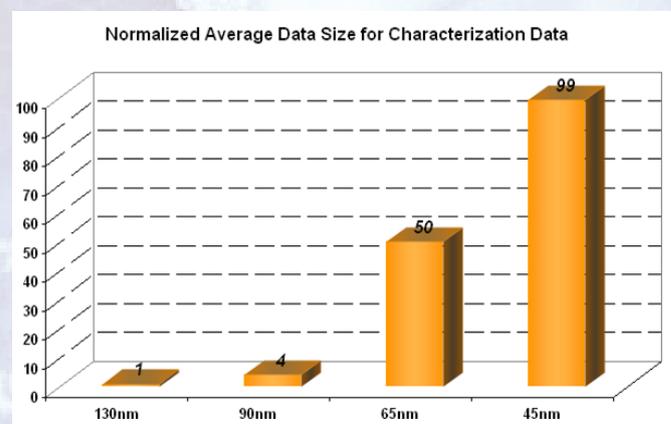
Arc presence in relation to the cell functionality

Crossfire now checks if the described arcs comply with the functionality of the cell. The new feature works for .lib, verilog, VHDL and TLF and checks that under the given arc condition the arc transitions (cell_rise, cell_fall) and polarity (negative, positive, none) are compliant with the function of the cell.

Characterization checks, CCS and ECSM versus NLDM mismatches

Fractal eases the move to current-source models. In order to ensure accurate delay analysis in 65nm and smaller geometries, many companies are now following the early adopters in supporting ECSM and/or CCS timing models. Although the compelling need for current-source models is obvious, the implementation for characterization, design-tools and quality assurance is far from trivial. As this is a major technology change, this often implies a change in characterization tool. Existing, home-brew characterization tools that have been serving for many process generations, and consequently have reached a high confidence level because of the silicon produced with them, now have

Newstools. The lack of confidence that exists for any new tools is only made worse by the data-explosion that occurs with the introduction of current-source models. This data-explosion is illustrated by the following graph that shows the typical size of Liberty models over the various process generations:



The exponential leap in data-volume needs to be attributed to 2 factors: current-source models replacing every NLDM sample with a current or capacitance curve (5-10 samples) and secondly an increase in the number of corners that need to be characterized. This makes it completely infeasible to scroll through a current-source Liberty file and get a visual feeling for the correctness and sanity of the characterized numbers. The Fractal CCS and ECSM characterization checks that are part of the Crossfire product allow our customers to regain this confidence in their characterization tool. Crossfire calculates the NLDM delays from the current-source data, and investigates the sanity of the current and capacitance curves (e.g. multiple peaks, “correction” currents). Trends such as peak-current vs. capacitance or delays/currents vs.

temperature or supply voltage are compared across the different current-source process corner characterizations. These sanity checks also include a comparison of the arcs and conditions characterized for identical cells between the existing, trusted characterization tool and the new tool under evaluation. From such automated comparisons one can quickly identify any possible omissions in the new tool or even in the existing tool that were never noticed. With these features, Crossfire can expedite the transition towards current-source timing models, getting design-teams up to speed faster in the latest process generations.

Vital compliance

Crossfire can now check if the mandatory VITAL arc description keywords are used.

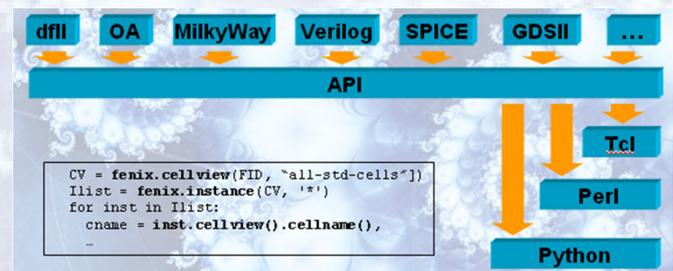
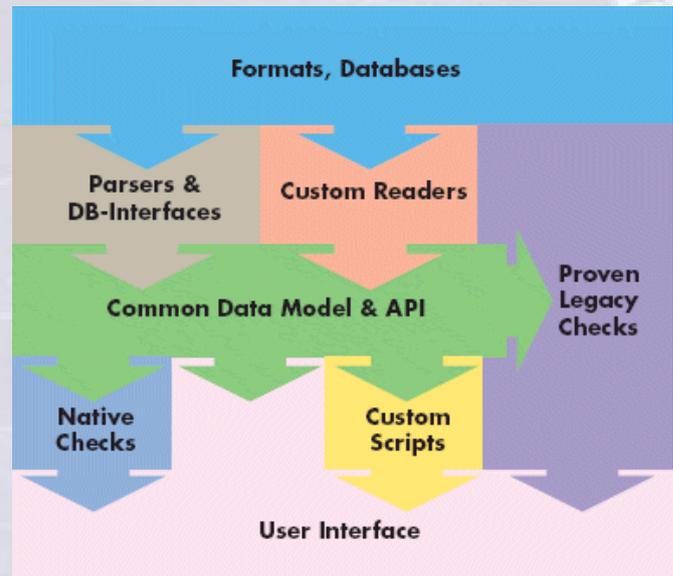
Crossfire can also work with the VITAL arcs (tsetup_*, trecovey_*, etc) instead of the VHDL arcs (SetupHigh, Hold_High, etc...) to check against arcs described in your verilog or liberty.

New checks

- Large step deviation in NLDM data
- NLDM table similarity between equal arcs under different conditions
- Bus check for VHDL data
- Presence of required database files

Crossfire API functionality:

Crossfire includes an API which allows you to integrate existing internal test into the Crossfire environment and also allows you to add extra tests in an easy way. Our API supports perl, tcl and python.



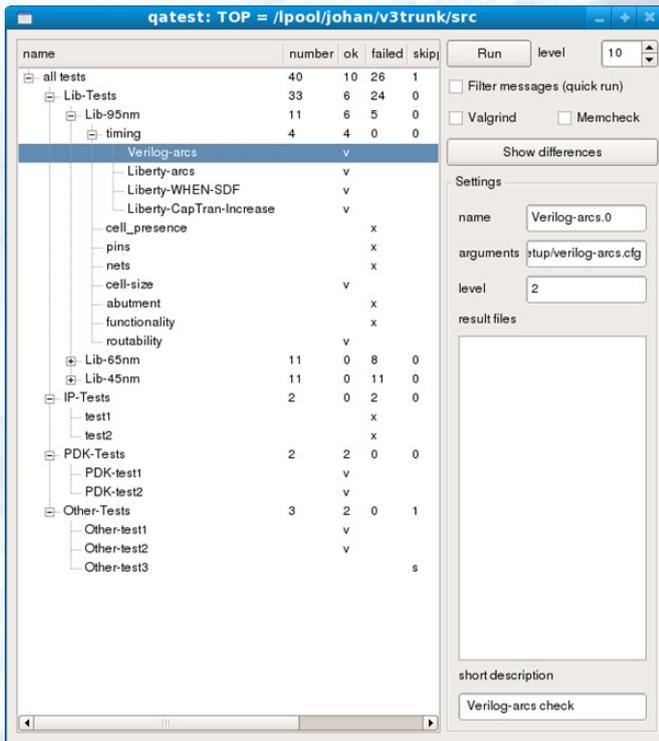
About Crossfire

Mismatches or modelling errors for Libraries or IP can seriously delay an IC design project. Because of the still increasing number of different views required to support a state of the art deep submicron design flow, as well as the complexity of the views themselves, Library and IP integrity checking has become a mandatory step before the actual design can start.

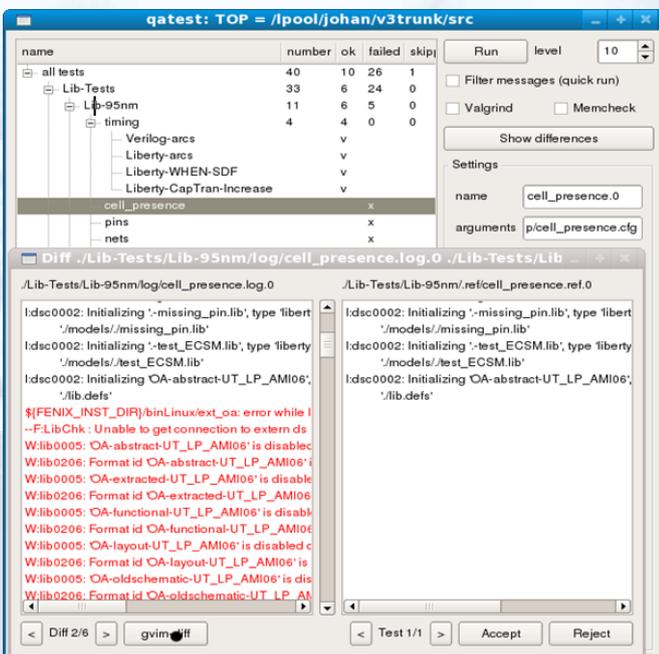
Crossfire helps CAD teams and IC designers in performing integrity validation for Libraries and IP. Crossfire makes sure that the information represented in the various views is consistent across the views and does not contain anomalies originating from e.g. failing characterization scripts.

QAtest Product

QAtest structures and organizes the created tests with Crossfire. It is also possible to add your own tests without the use of the Fractal software.



QAtest will store the “golden reference” results of tests. QAtest compares the “golden reference” test result with current test results.



About Fractal Technologies

Fractal Technologies is a privately held company with offices in San Carlos, California and Eindhoven, the Netherlands. The company was founded by a small group of highly recognized EDA professionals.

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