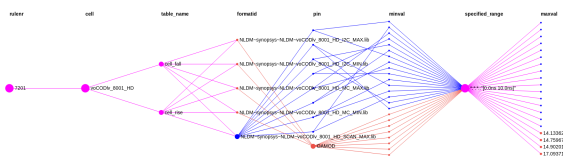


## USE-CASES FOR CROSSFIRE 7ERROR FINGERPRINT VISUALIZATION

A Fractal whitepaper

A recent addition to the Crossfire IP qualification tool is the visualization of the structure behind the errors that were found, known as the error fingerprint. This paper describes various use-cases for improving IP quality based on the insights gained from error fingerprint visualization.

A Crossfire error fingerprint is represented as a network with nodes representing the databases, cells, arcs and values that all belong to the same class of errors. An edge in the graph is drawn if both objects are associated with the same error. The following screenshot serves to further explain the concept:



[Click on link to read white paper](#)

## FRACTAL BLOG SEMIWIKI

Power Checks for Your Libraries

By Bernhard Murphy

When your design doesn't work, who owns that problem? I don't believe the answer to this question has changed significantly since semiconductor design started, despite distributed sourcing for IP and manufacturing. Some things like yield can (sometimes) be pushed back to the foundry, but mostly the design company owns the problem. Even if you finally figure out the problem was in one of those outsourced technologies, it's often too late to matter. Which is why incoming inspection is growing in popularity. Better to find a potential problem up-front when you

still have time to get the supplier to fix it or you can possibly switch to another option.

[Click link to read full article](#)

## FRACTAL AT DAC, BOOTH 939

Fractal will participate at DAC 2017.

For Crossfire presentation and demo please email: [rene@fract-tech.com](mailto:rene@fract-tech.com)

This year's DAC will be in Austin, Texas June 18-22

[www.dac.com](http://www.dac.com)



## CROSSFIRE UPDATES

Recent Crossfire improvements:

- New Rules and Features:
  - Tag presence and values check
  - Tag cross check
  - Cell vs cell power table monotonicity check
  - Cell vs cell delay table monotonicity check
  - Cell vs cell attribute consistency check
  - Cell vs cell arc consistency check
  - Cell vs cell pin consistency check
  - Rule 31: Checks power type across formats
  - Rule 14: Easy setup for same layout types
  - New format: CPF
  - SystemVerilog parser: Supports interfaces.
  - New tool: frc\_doc for easy Fractal docs launch.



## ABOUT CROSSFIRE

Crossfire reports mismatches or modeling errors for Libraries and IP that can seriously delay an IC design project.

Library and IP integrity checking has become a mandatory step for a "state of the art" deep submicron design due to the following challenges:

- The sheer number of different views
- The complexity of the views (ECSM, CCS)
- The loss of valuable design time
- Time to market

Crossfire helps CAD teams and IC designers achieving a high quality of design data in a short time.

Crossfire assures that the information represented across the various views is consistent and does not contain anomalies.

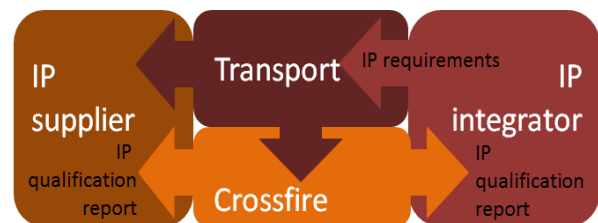
## CROSSFIRE USABILITY FEATURES

Graphical setup creation & run environment as well as batch runs

- Powerful hierarchical configuration language supporting macro functions
- Graphical debugging (message > double click > open relevant views)
- Graphical output filtering (zoom in on cells/formats/error-types)
- Waiving mechanism
- HTML and CSV reports
- Automatic setup generation
- Setup API
- Generic setups
- Parallel Parsing feature

## FRACTAL TRANSPORT

Transport™ serves as an input format to Crossfire, describing what checks Crossfire needs to execute on which IP databases, as specified by the IP integrator.



Fractal Crossfire and Transport

Read the [Fractal White Paper](#) online!

## CROSSFIRE INTEGRATION FEATURES

API for creating database independent checks, available in: Perl, Tcl and Python

Existing customer validation scripts can be integrated

Visualization messages/results from customer scripts (double click opens message)

## CROSSFIRE INTERVIEW

Visualization and browsing of database contents

Opens e.g. LEF, GDS, CDB, OA and Milkyway views in a single window

## CROSSFIRE DIAGNOSE

Diagnose is the Crossfire GUI designed for users that to only analyze Crossfire results. The setup and test definition sections of Crossfire are completely shielded from the user. The user can see, report, filter wish, waive and analyze the generated Crossfire messages.



## **ABOUT FRACTAL TECHNOLOGIES**

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

### **CONTACT FRACTAL:**

For Info, Sales or Support please contact:

[info@fract-tech.com](mailto:info@fract-tech.com)

[www.fract-tech.com](http://www.fract-tech.com)

FOR CHINA AND TAIWAN  
AVANT TECHNOLOGY INC:

For Info, Sales or Support please contact:

[sales@avant-tek.com](mailto:sales@avant-tek.com)

[support@avant-tek.com](mailto:support@avant-tek.com)

FOR KOREA  
LINKGLOBAL21:

For Info, Sales or Support please contact:

[dwkang@linkglobal21.com](mailto:dwkang@linkglobal21.com)

FOR JAPAN  
JEDAT OFFICE:

For Info, Sales or Support please contact:

[tanaka.kenichi@jedat.co.jp](mailto:tanaka.kenichi@jedat.co.jp)