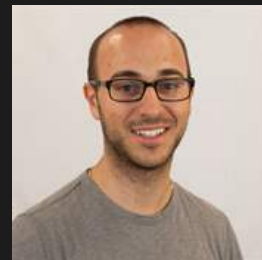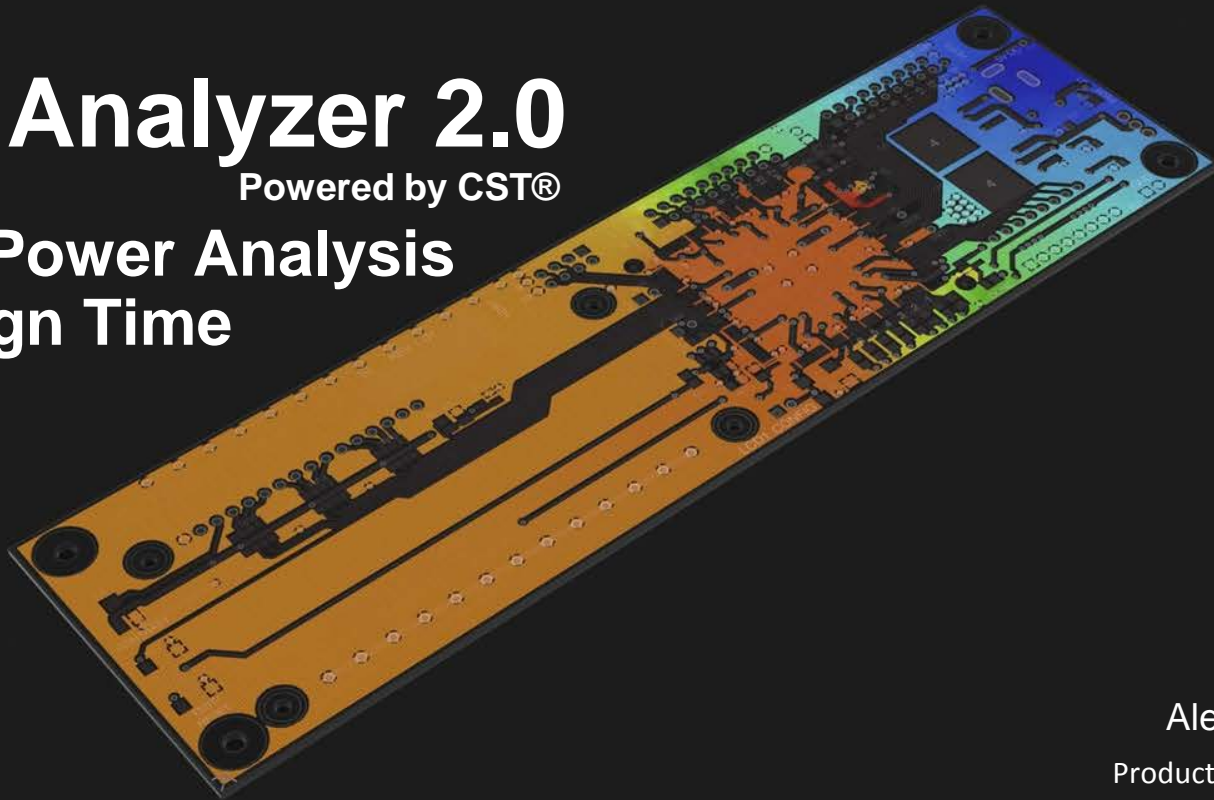# PDN Analyzer 2.0

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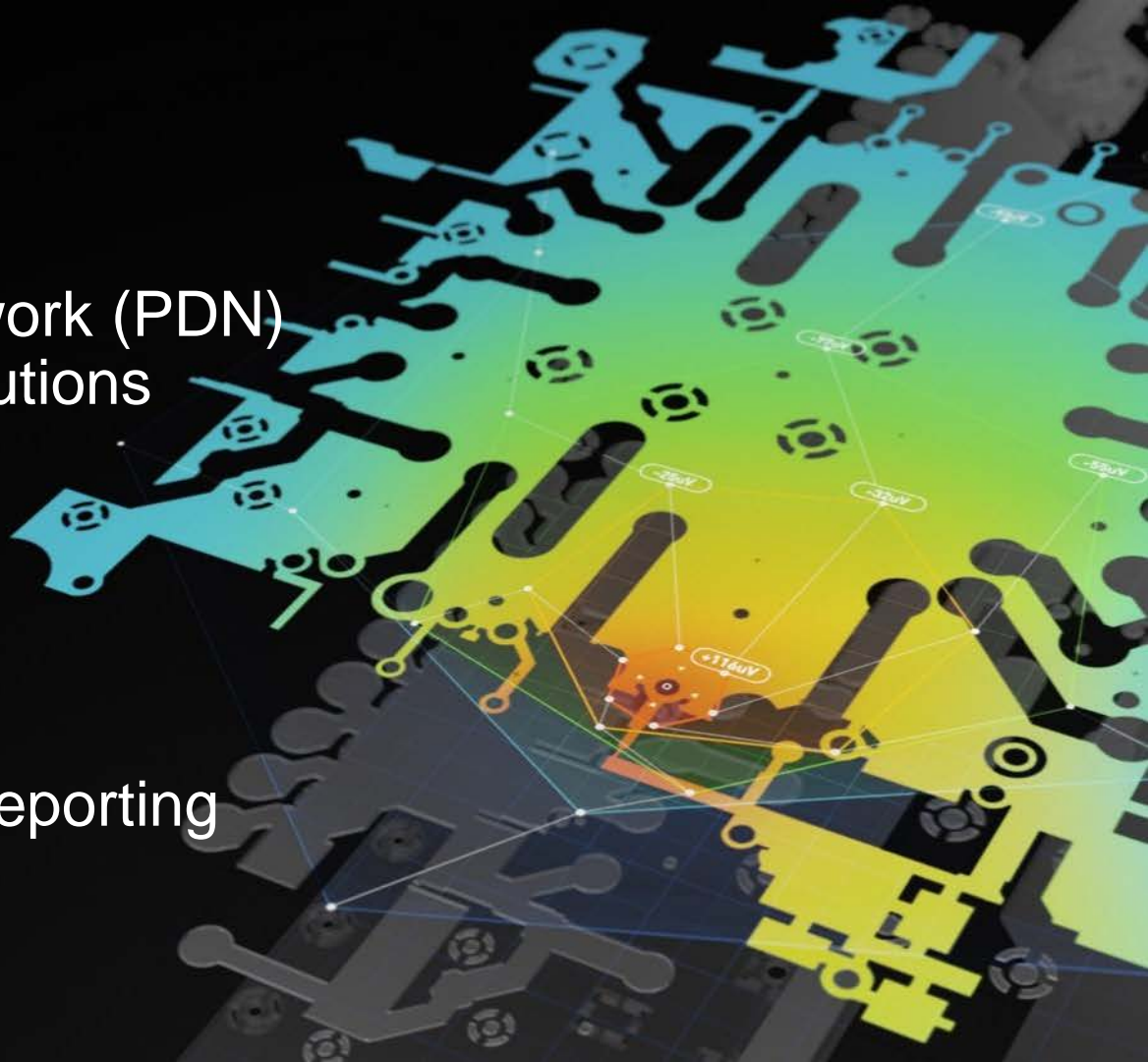
Visual Power Analysis at Design Time

Alexsander Tamari

Product Marketing Engineer

Low supply voltage at load components

-Unexpected Voltage Drops

Delamination and Via Separation

-High Current Density and Unbalanced Copper

Copper Plane Resonance

-Disconnected Copper Islands and Peninsulas
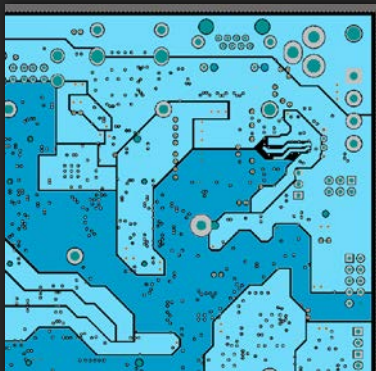
Lengthy power paths
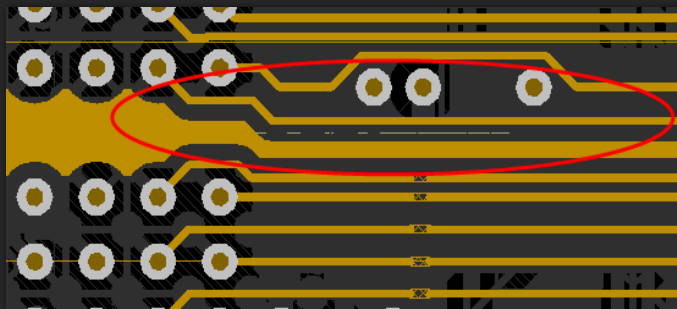
Power polygon width reduced by signal routes

Inadequate size or number of vias

✓ Ensure Critical Component Power Delivery

✓ Mitigate Delamination and Via Separation

✓ Reduce Costly/Time Consuming Prototype Iterations

✓ Eliminate Copper Plane Resonance

High Density

High Current
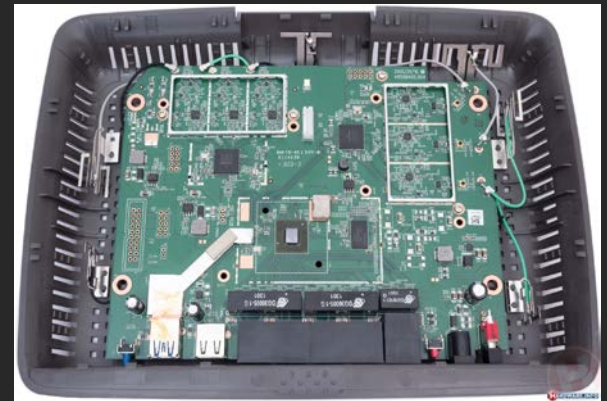
High Speed

Expensive

Disjointed

Complicated

❌ Costs more than design tools

❌ Back and forth file transfer

❌ Large, difficult barrier to entry

Critical Path

**Determine Power Rails**

Finish PDN Layout

Configure Simulation

PCB Designer forwards the design to the SI/PI Expert

SI/PI expert imports the design into specialized tools

Expert verifies imported data is correct and complete

Expert interprets simulation results

Expert simulates

Expert configures DC-drop simulation

Expert adds missing design parameters

Design Analysis

Prototype

Yes

Done?

No

Expert determines corrective action

Expert communicates corrective action to PCB designer

Designer revises PCB per expert's notes

Design Improvements

Simple

✓ NO EXPERT REQUIRED

Concurrent

✓ No design data transfer

✓ Directly in YOUR design environment without delays

Cost-effective

✓ Cheaper than a single prototype or respin

✓ Competitor solutions are 2 to 3 times more expensive

```
┌──────────────┐     ┌──────────────┐     ┌──────────────┐                ╱╲                  ☀
│ Determine PDN│────▶│ Configure PDN│────▶│    Design    │─────────▶     ╱    ╲    Yes     Prototype
│  Power Rail  │     │   Analyzer   │     │   Analysis   │              ╱ Done? ╲──────▶
└──────────────┘     └──────────────┘     └──────────────┘              ╲      ╱
                            ▲                     ▲                        ╲   ╱
                            │    Reduce Critical Path                      ╲╱
                            └──────────────────────┤                     No │
                                                   │              ┌──────────────┐
                                                   └──────────────│ Make Design  │
                                                                  │ Improvements │
                                                                  └──────────────┘
```
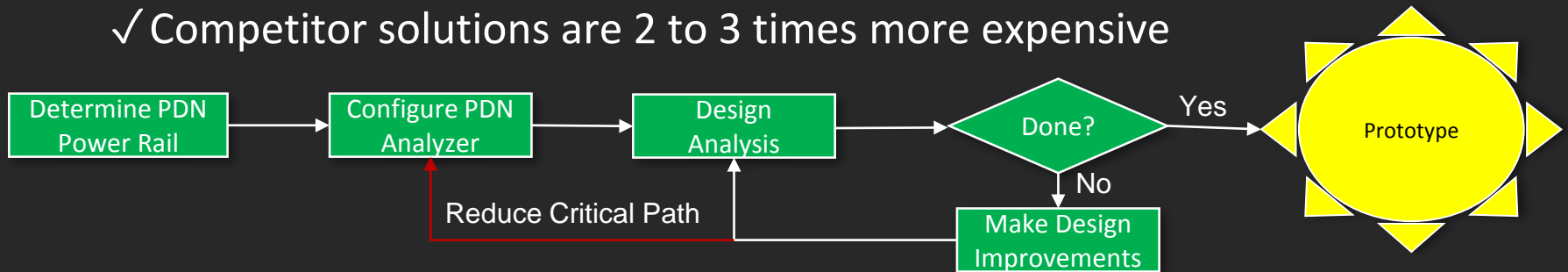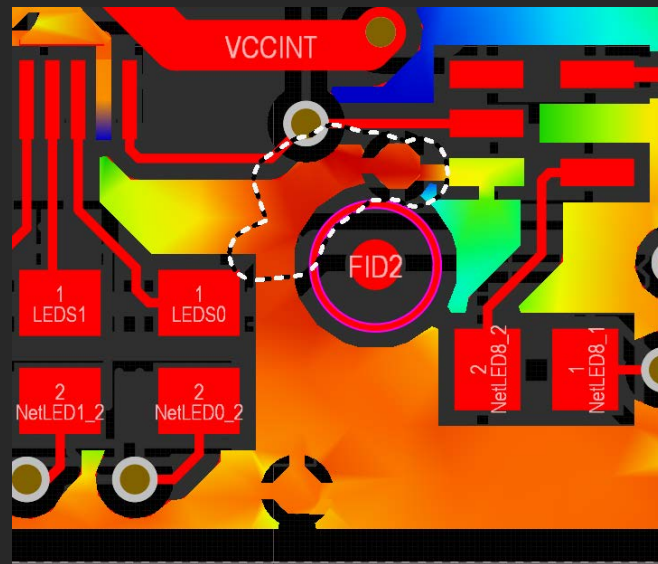
✓ **Visual Power Analysis**

✓ **Unified Design & Analysis Environment**

✓ **Simultaneous Multi-Network Simulation**

✓ **Reports for Critical Areas**

Start Your Free Trial

Looking to begin your free trial of PDN Analyzer? We'll help you get started. Please answer the following question to get detailed instructions on how to install your trial license.

Which version of Altium Designer do you currently use?

Altium Designer 17.1 or higher	Altium Designer 17.0 or lower	I don't currently have any Altium Designer

Follow these instructions to get your evaluation license for the PDN Analyzer 2.0 extension with Altium Designer 17.1 and higher.

Take a look at the PDN Analyzer Guidebook to learn more.

Contact me with any questions at Alexsander.Tamari@altium.com

Q: What determines PASS/FAIL conditions

A: PASS/FAIL conditions are determined by the user and can be set for each source or load.

Q: Is there any plan to add temperature estimation in PDN Analyzer?

A: This is something we know that people want and we are currently looking into how to best implement this.

Q: Are there any plans to implement AC analysis

A: Yes, we plan to continue improve PDN Analyzer which includes adding AC analysis.

Q: Can you reverse the color scale

A: Not at this point but we are currently working on this functionality.

Q: Can loads in multi-channel instances be added in batch?

A: Yes. But remember when you load different network configurations in batch mode each configuration will be simulated individually from each other.

Q: Can you change copper weight?

A: Not at this point. But you can change how the conductivity and resistivity of the metal is defined.

Q: Does it handle blind vias?

A: Yes, PDN Analyzer can handle blind, buried and standard vias.

Q: Does PDNA simulate with multiboard?

A: Currently it does not, you would need to analyze each board individually.

Q: Can PDNA provide inductance of the power path?

A: No. Reactive attributes of the copper structures are not calculated because PDNA currently focuses on DC.