



Welcome to our PADS world tour!  
Zagreb, 10.10.2016

*Frédérique Bouvier – PADS Territory Manager EMEA*

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Mentor Graphics Corporation, 10000 Woodloch Forest Drive, Austin, TX 78749, USA  
Mentor Graphics Corporation, 10000 Woodloch Forest Drive, Austin, TX 78749, USA



- Mentor Graphics initiative to present pads major new release
- This could not happen without our partners
- Around 35 locations in EMEA / 15 distribution partners
- 3 in the CAD/CAM territory (Zagreb, Ljubljana, Belgrade)
- Why do we need resellers?
  - Support in your Language
  - Close to customers
  - Each market has a different expectation, design complexities or specialisation
  - CAD/CAM has a reputation on the market and the bandwidth to support you closely



- Thanks for attending today in Zagreb!
- You automatically get a chance to ....

**Win a Fitbit Blaze!**

Must be present to win!

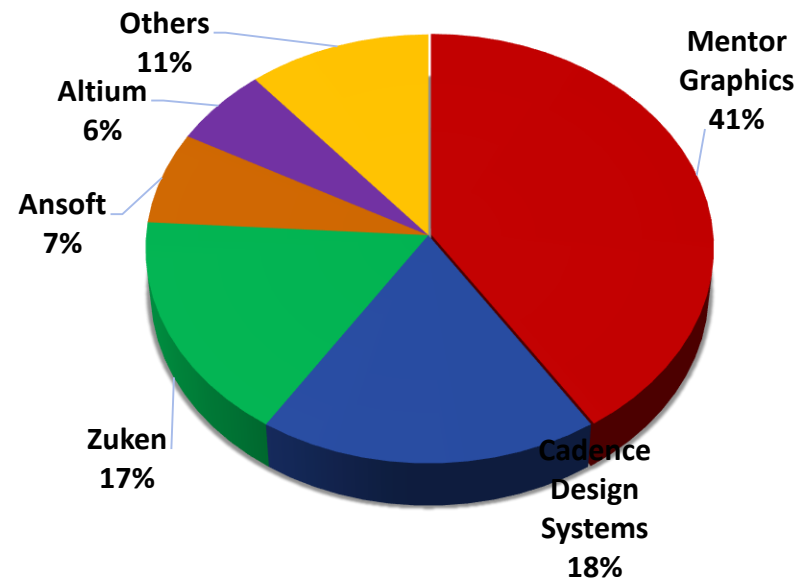


**Mentor  
Graphics**

# Mentor Graphics Corporation

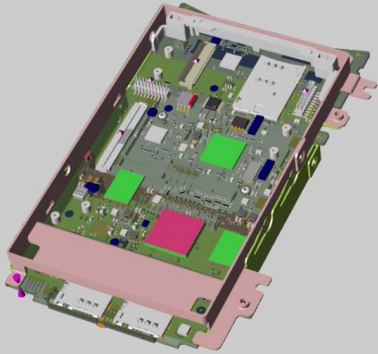
PCB Market Share, Worldwide

- Founded in 1981
- Enabling PCB design since 1984
- Headquarter in Wilsonville, Oregon
- FY2015 revenues \$1.2B
- 5500 employees
- PCB market leader
- R&D investment leader
- Award-winning support

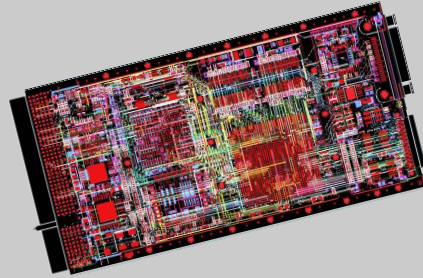


\*Source: Gary Smith EDA, 2014

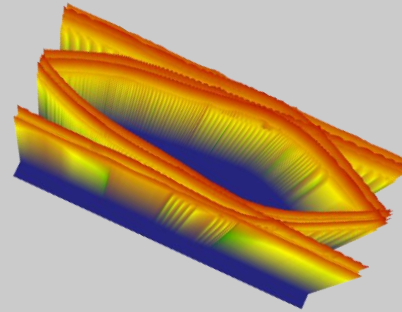
# Delivering Scalable Solutions for PCB Systems Design



**Xpedition**  
Enterprise PCB Design



**PADS**  
Project-based PCB Design



**HyperLynx**  
PCB Analysis & Verification

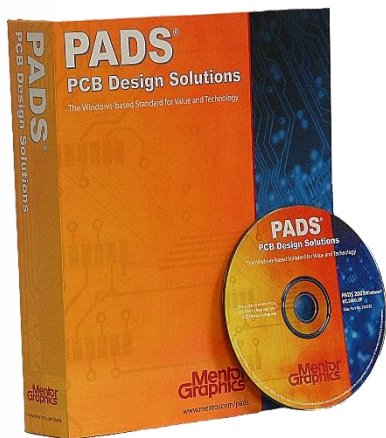


**Valor**  
PCB Assembly, Test, &  
Manufacturing Execution

# The PADS Evolution From Desktop PCB to Electronics Product Creation

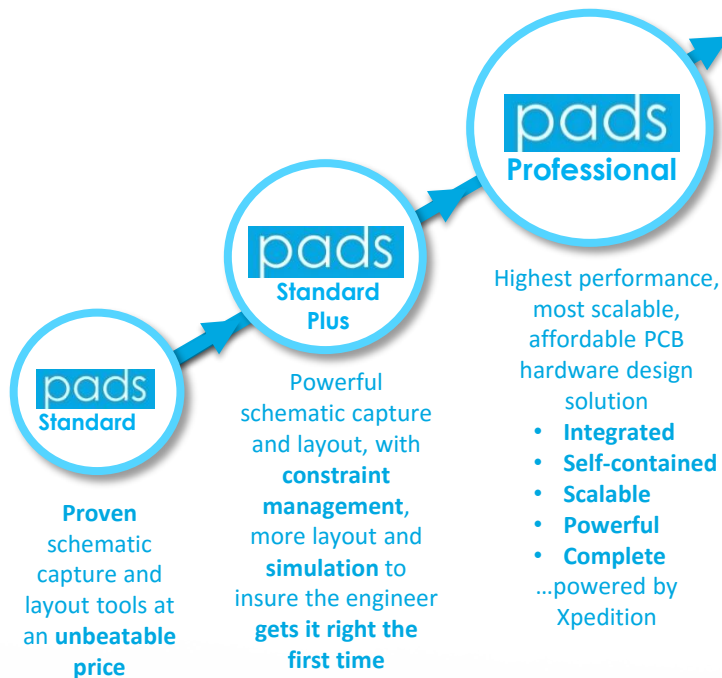
< 2014

“Desktop PCB Design”



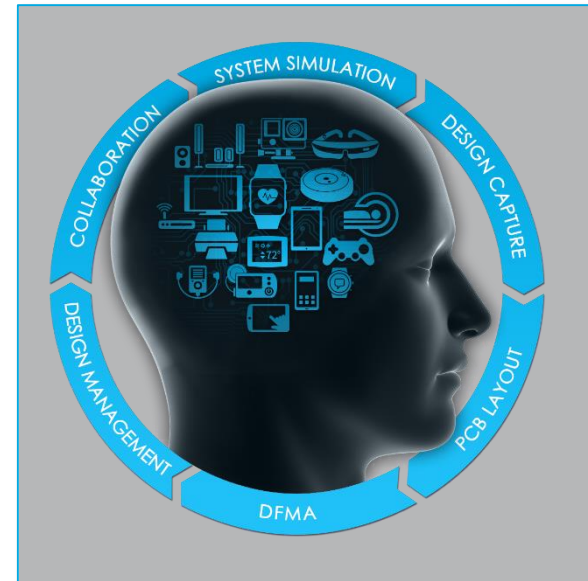
2015

“PADS Solutions”

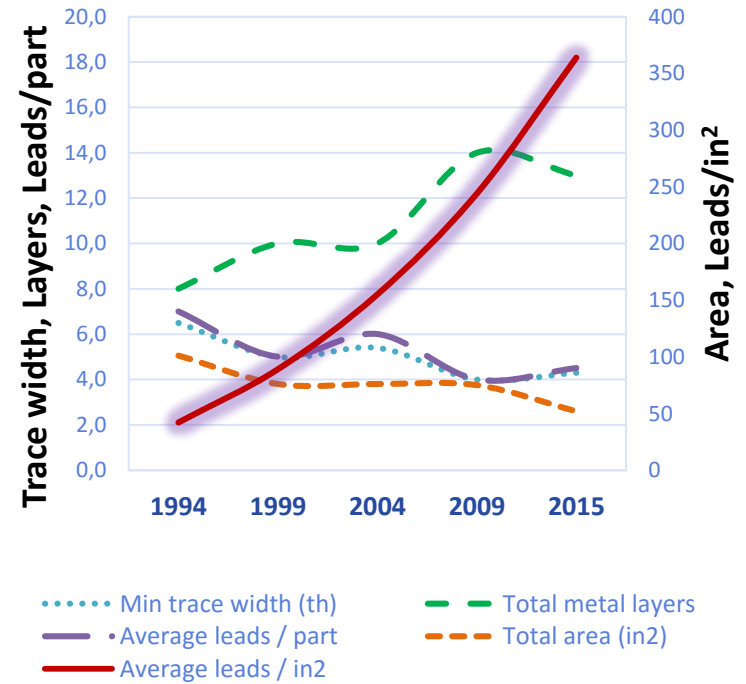
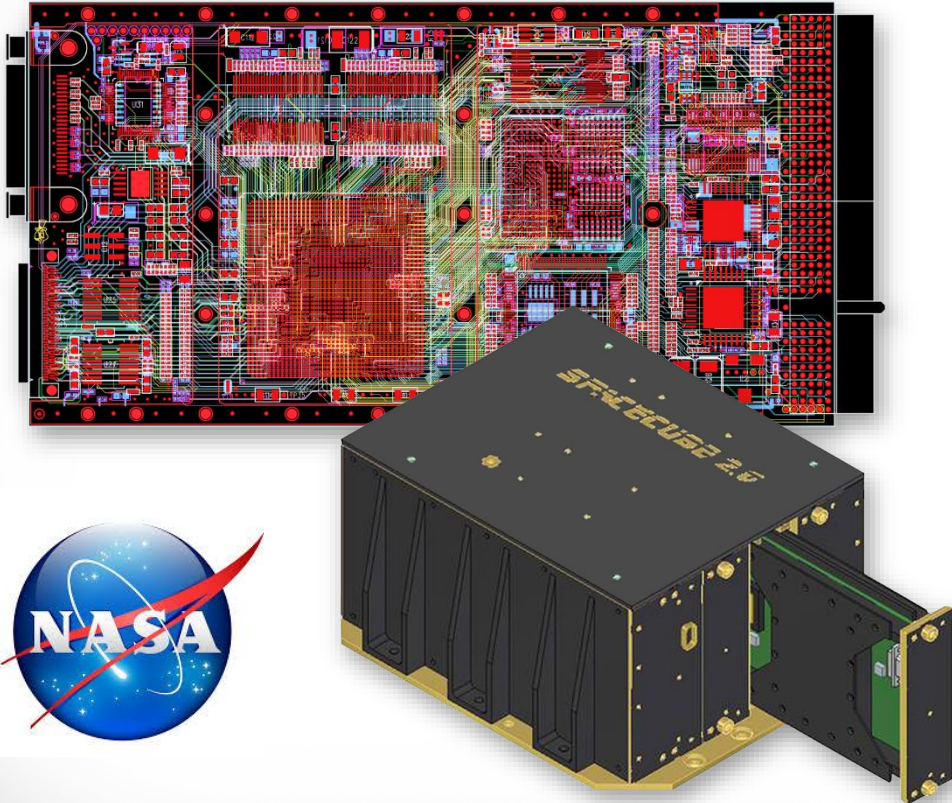


2016

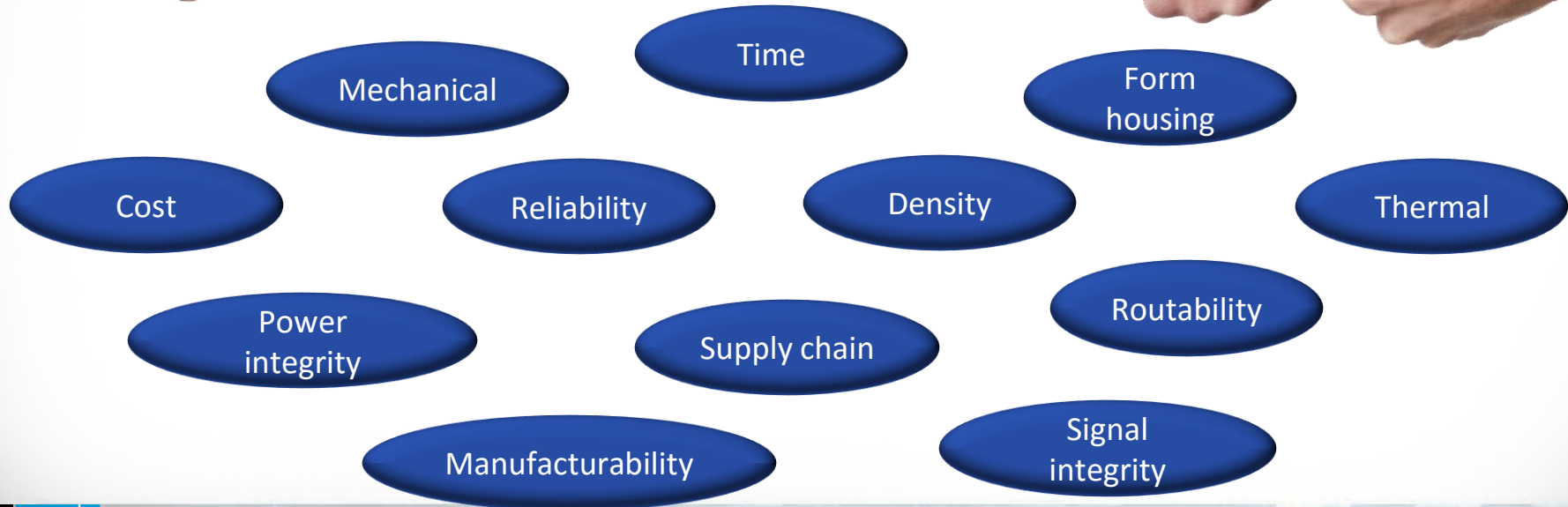
“Product creation platform”



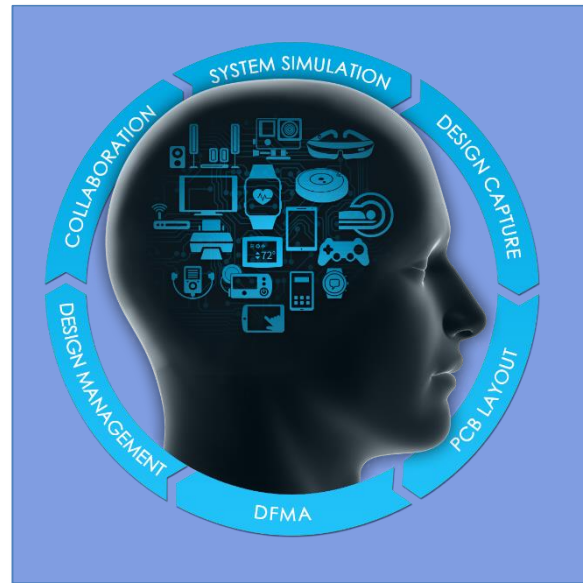
# PCB Systems Complexity is Exponentially Increasing



# Design Complexity Requires Multi-domain Trade-offs



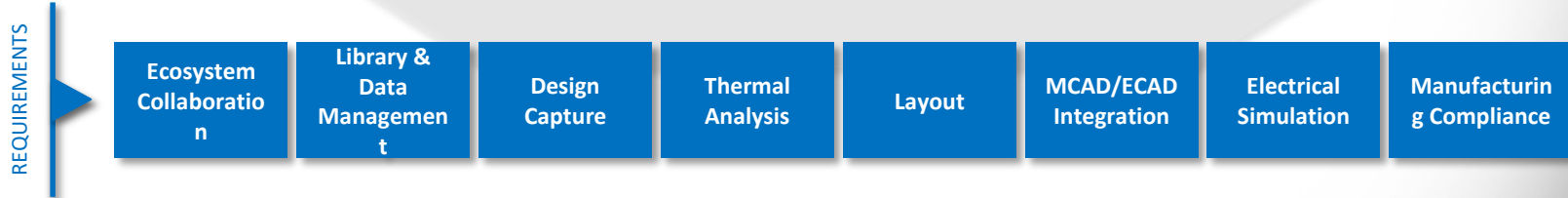
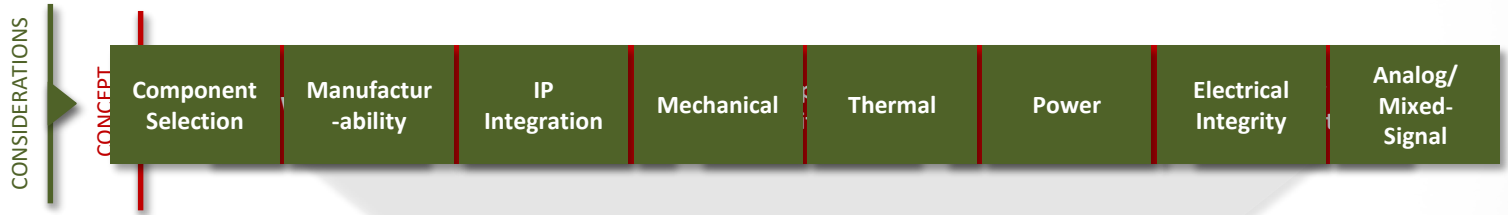




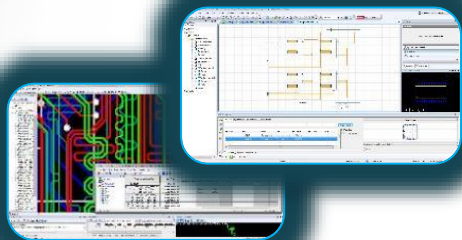
*“Product Creation Platform”*

# Product Creation Challenges

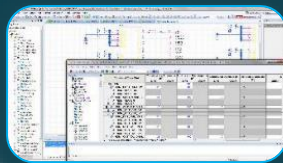
## *From Concept-to-Delivery*



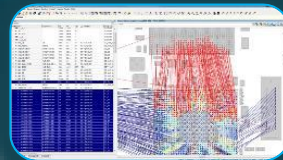
# PADS Delivers Product Creation



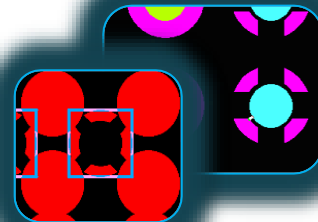
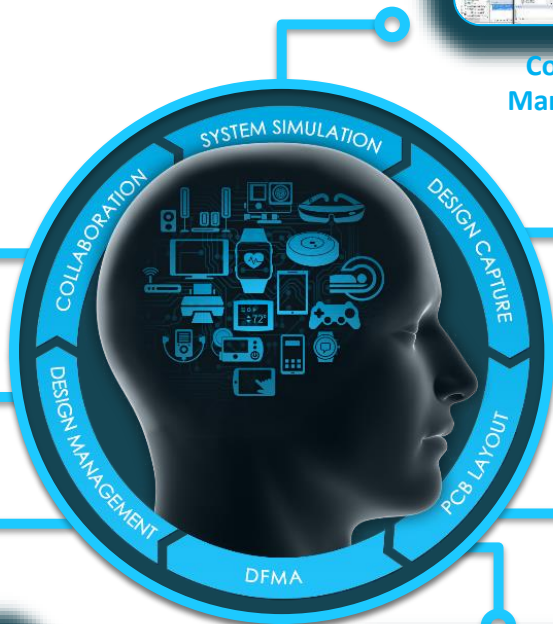
Schematic Capture and PCB Place and Route  
*PADS DXDesigner, PADS Layout, and PADS Router*



Constraint Management



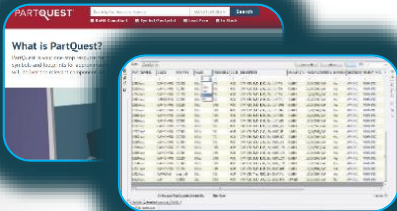
FPGA/PCB Optimization  
*PADS I/O Optimizer*



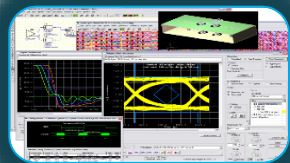
Design-for-Manufacturing  
*PADS DFMA*



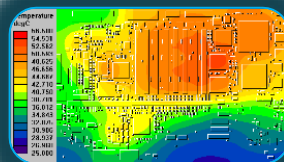
ECAD-MCAD Collaboration  
*PADS Collaborator*



Component Data Management  
*PartQuest, PADS DXDataBook*



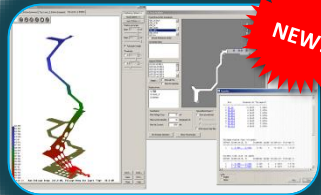
Topology Exploration and Signal Integrity  
*HyperLynx, LineSim, and BoardSim*



Thermal Analysis  
*HyperLynx Thermal*

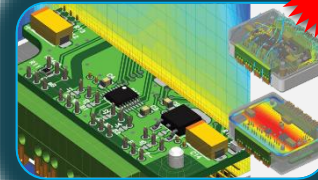
# PADS Extends

## AMS and High-speed Analysis for Product Creation



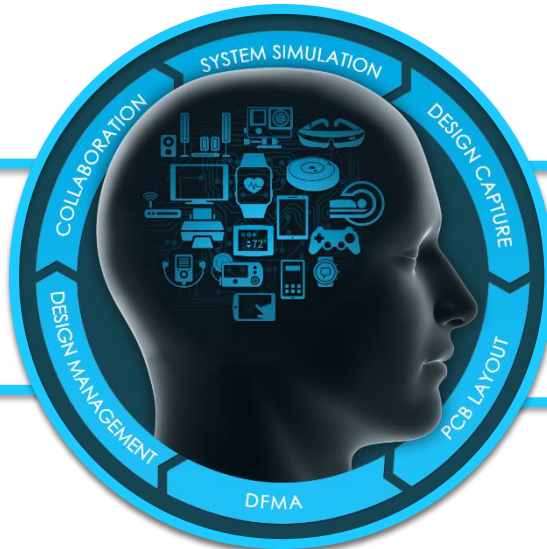
**NEW!**

Voltage Drop  
PADS HyperLynx DC Drop



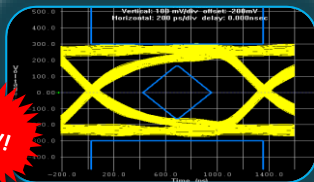
**NEW!**

Electronics Cooling  
PADS FloTHERM XT



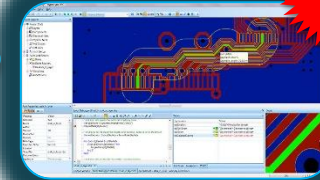
**NEW!**

Analog Mixed-Signal  
PADS AMS Design Suite



**NEW!**

DDRx Analysis  
PADS HyperLynx DDR



**NEW!**

Electrical Design-Rule-Check  
PADS HyperLynx DRC

# Driving Competitive Advantage

Mentor  
Graphics

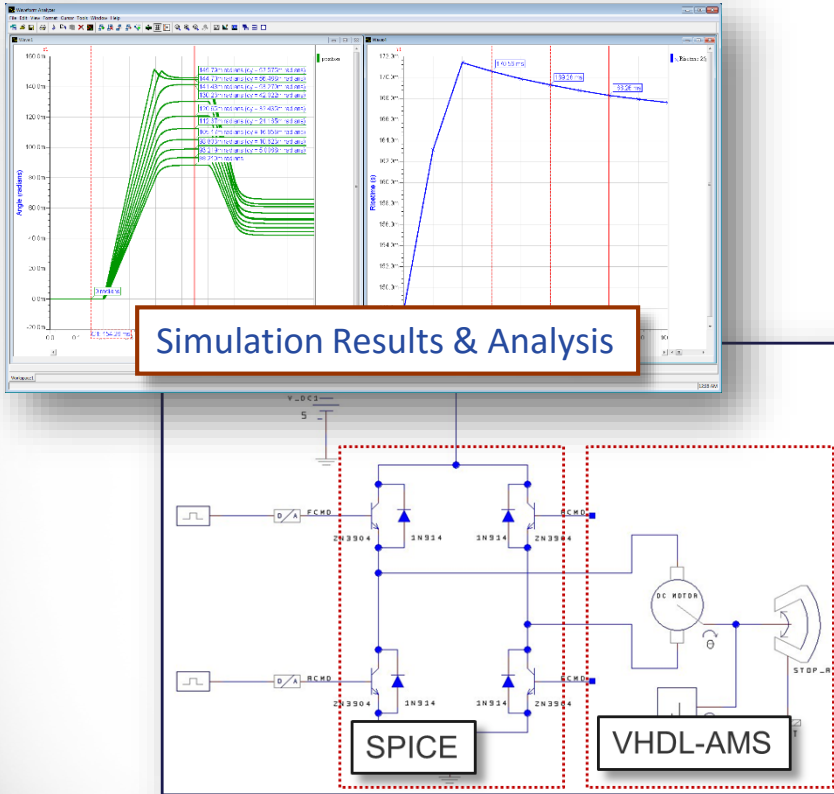
pads

start smarter

personal automated design system

# PADS AMS Design Suite

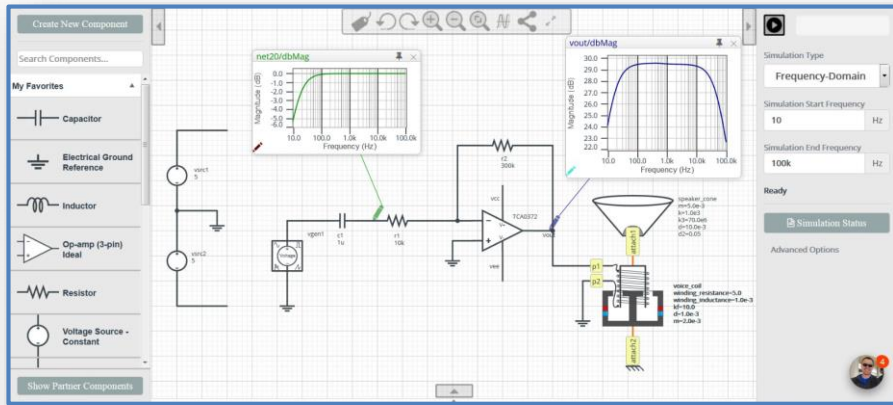
NEW!



- ✓ Ensure intent, performance, and reliability of analog / mixed-signal (AMS) circuits
  - Produce electronic product designs faster and easier with single environment and flow
- ✓ Seamless and accurate representation of both electronic and electromechanical circuit elements
  - Power and flexibility of VHDL-AMS, an IEEE standard, and comprehensive SPICE capabilities
- ✓ Complete solution for schematic design, circuit simulation, and high-speed topology exploration
- ✓ Advanced analysis included for behavioral verification, scenario exploration, and optimization
- ✓ Unmatched price / performance

# PADS AMS Cloud

NEW!

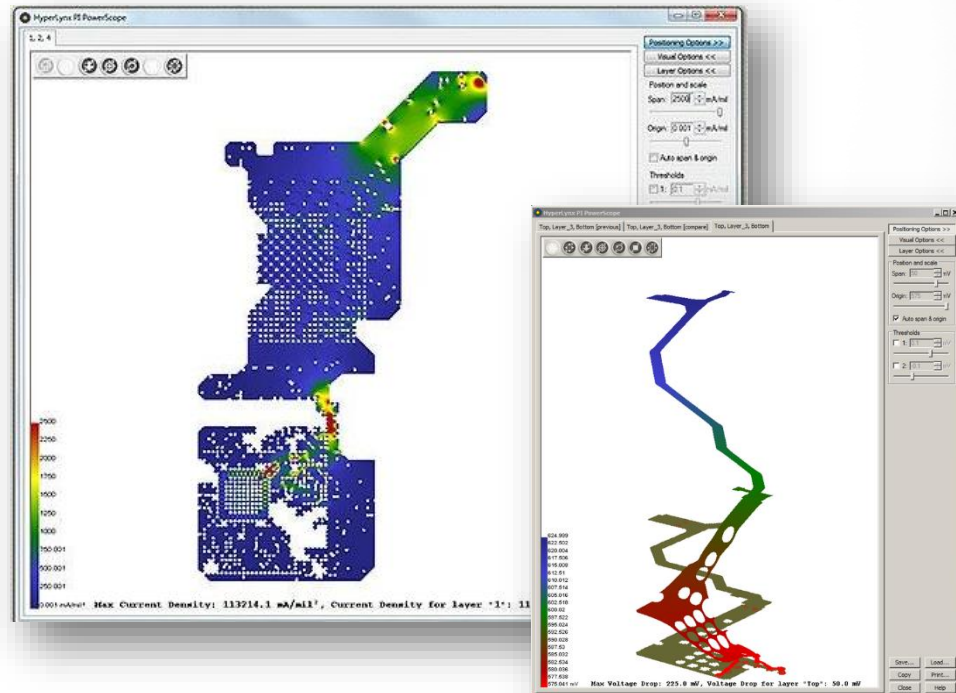


- ✓ Explore and analyze circuit concepts and designs
  - Electronics and mechatronics
- ✓ FREE, cloud-based circuit exploration / simulation environment and community for PADS users
- ✓ Advanced simulation and modeling
  - Analog, digital, mixed signal and electromechanical systems
- ✓ Circuit transfer from Cloud to Desktop environment
  - Eliminate need to redraw circuit

# PADS HyperLynx DC Drop

NEW!

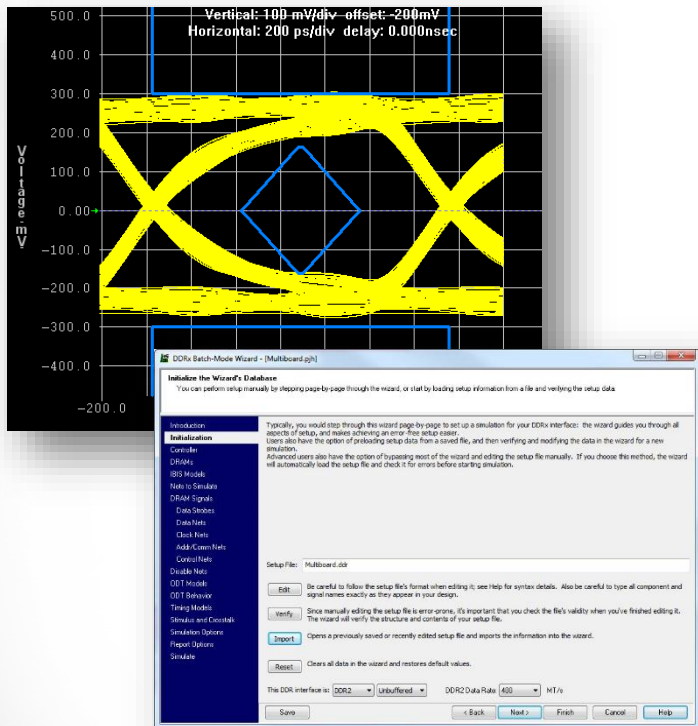
- ✓ Avoid unexpected circuit behavior by identifying power-delivery issues early
- ✓ Validate power supply impedance to optimize power distribution networks (PDNs)
- ✓ Assess voltage drop by quickly and accurately identifying areas of excessive current density
- ✓ Fast, accurate results, tightly integrated with PADS





# PADS HyperLynx DDRx

NEW!



- ✓ Identify and solve Signal Integrity and timing challenges specific to DDRx designs
- ✓ Resolve typical SI impairments
  - Overshoot/undershoot
  - Ringing
- ✓ Identify DDRx timing issues
  - Setup/hold
  - Derating
  - Skew
  - Data bus margins
- ✓ Unparalleled technology for mainstream PCB design

# PADS HyperLynx DRC

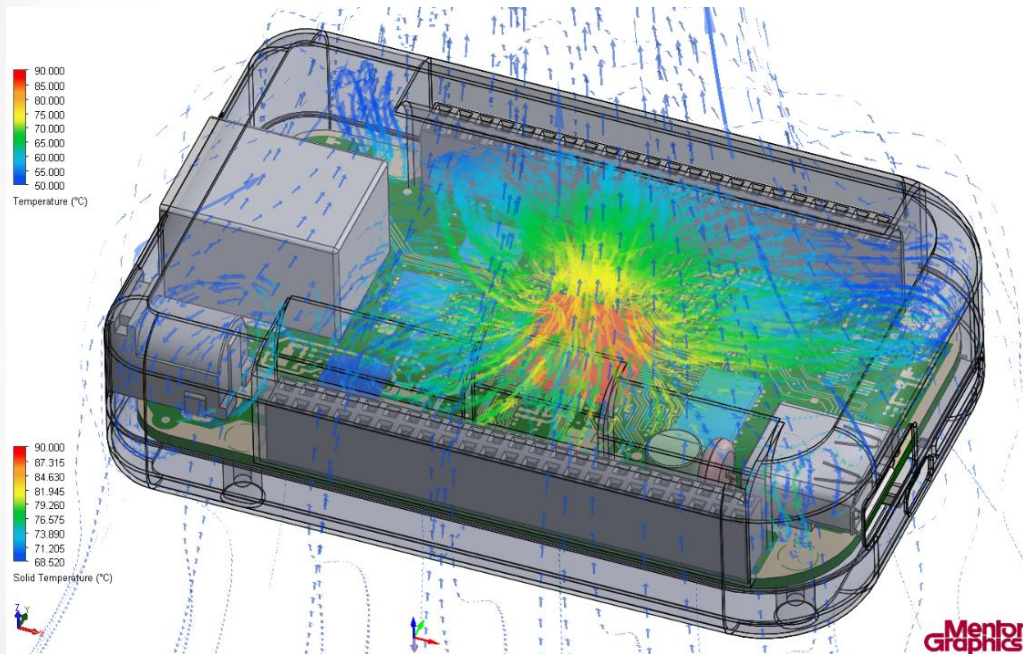
NEW!

- ✓ Rules-based approach vs traditional simulation to identify non-CAD constraints
  - Fast time-to-results
  - Simple setup for complex challenges
- ✓ Out-of-the-box checks for
  - EMI
  - Signal integrity
  - Power integrity
- ✓ Visual results, easy identification of violations integrated with PADS PCB

The screenshot displays the PADS HyperLynx DRC interface. On the left, a tree view titled 'Rules and Results' shows a hierarchy of rules. The 'EMI' folder is expanded, showing rules like 'Edge Rate To Period', 'Edge Shield', 'Exposed Length', 'Filter Placement', 'ICs Over Split', 'IO Coupling', 'Metal Island', 'Net Crossing Gaps', 'Net Near Plane Edge', 'Vertical Reference Plane Change', and 'Via Stub Length'. The 'SI' folder is also expanded, showing rules like 'Crosstalk Coupling', 'Diff Impedance', 'Diff Pair', 'Edge Rate', 'Guard Trace', 'Impedance', 'Long Nets', 'Long Stub', 'Many Vias', and 'Termination Check'. On the right, a 'Details' window shows the following information for a violation: Net: /SMB3\_DATA, Signal layer: SIGNAL\_1, Reference layer: POWER\_1, Gap width: 411.6 mil, Gap length: 1.78 in, Gap square size: 0.05656 in<sup>2</sup>. Below this, there are 'Actions' listed: --> Zoom to Violation, --> Highlight Net and Zoom In, --> Highlight Net and Zoom Out, and --> Clear Drawing.

# PADS FloTHERM XT

NEW!



- ✓ Allows hardware engineers to perform thermal analysis
- ✓ 3D computational fluid dynamics (CFD) solution supports steady state and transient analysis
- ✓ Easily import mechanical objects such as product enclosure & heat sinks
- ✓ Perform thermal analysis with enclosure earlier in the design cycle

# Customer Success with PADS

“5 out of 5 Stars”

for integrated HyperLynx in PADS  
flow



Efficient Design-for-  
Manufacturing



60% faster time-to-  
results



Accurate Thermal  
Analysis



Produce products of  
higher complexity

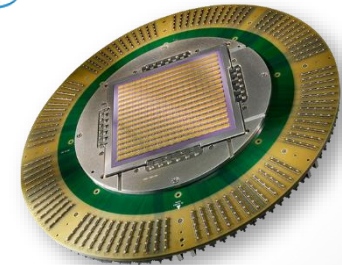


Tackles complex  
design challenges



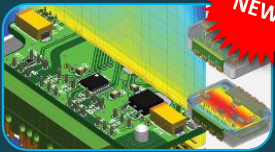
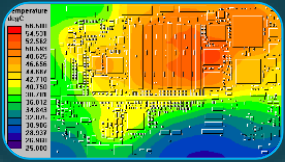
# Our Mission: Delivering Competitive Advantage

WE ENSURE **NOTHING**  
STANDS BETWEEN BEST  
IDEAS  
AND THE FINISHED  
PRODUCT.

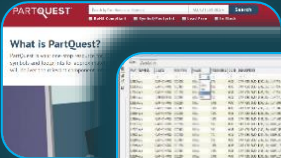


# PADS Delivers

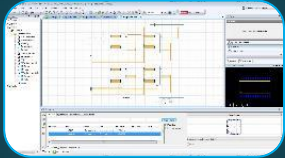
- 1 Product Creation Platform for electronics systems, from concept to creation
- 2 Powerful technologies built on Mentor's market-proven PCB technologies
- 3 Scalable solutions as your needs and design challenges grow
- 4 Easy-to-implement, easy-to-use, and highly affordable



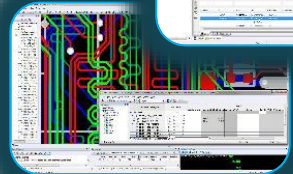
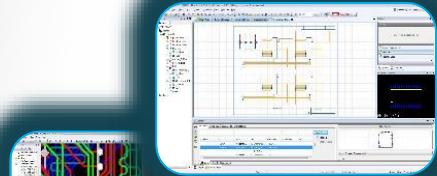
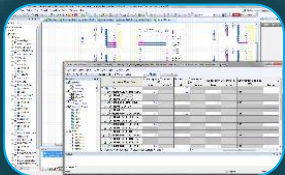
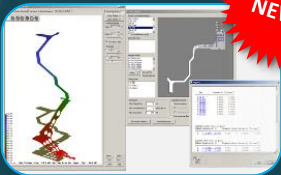
**NEW!**



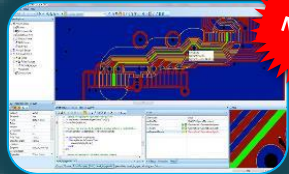
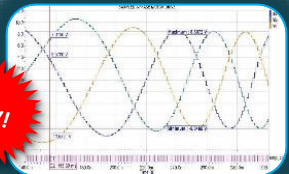
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1000000001	...	...	...	...
1000000002	...	...	...	...
1000000003	...	...	...	...
1000000004	...	...	...	...
1000000005	...	...	...	...
1000000006	...	...	...	...
1000000007	...	...	...	...
1000000008	...	...	...	...
1000000009	...	...	...	...
1000000010	...	...	...	...



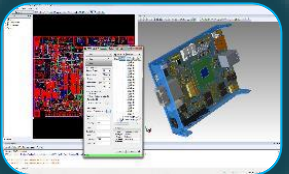
**NEW!**



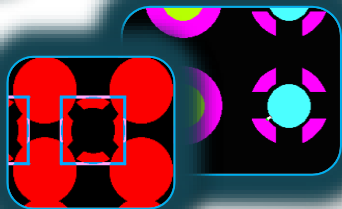
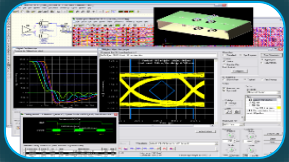
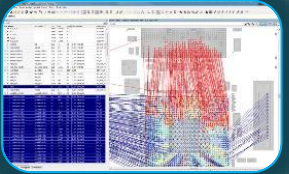
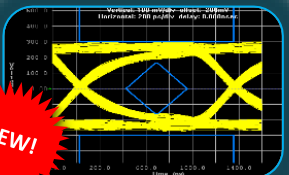
**NEW!**



**NEW!**



**NEW!**



**Mentor  
Graphics®**

**pads**

personal automated design solutions

**CADCAM**  
G R O U P

**Thank you!**

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[www.cadcam-group.eu](http://www.cadcam-group.eu)