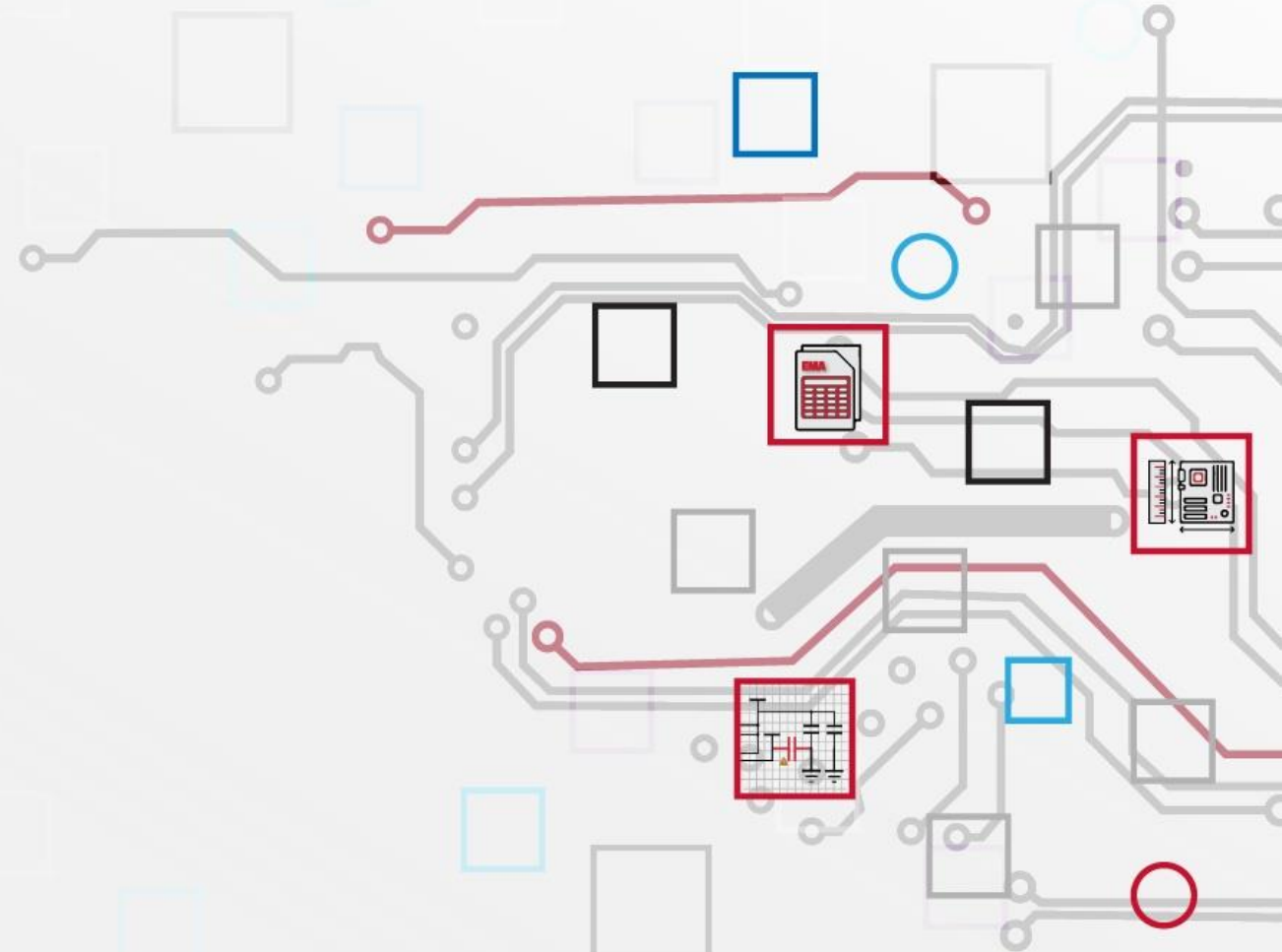


WEBINAR

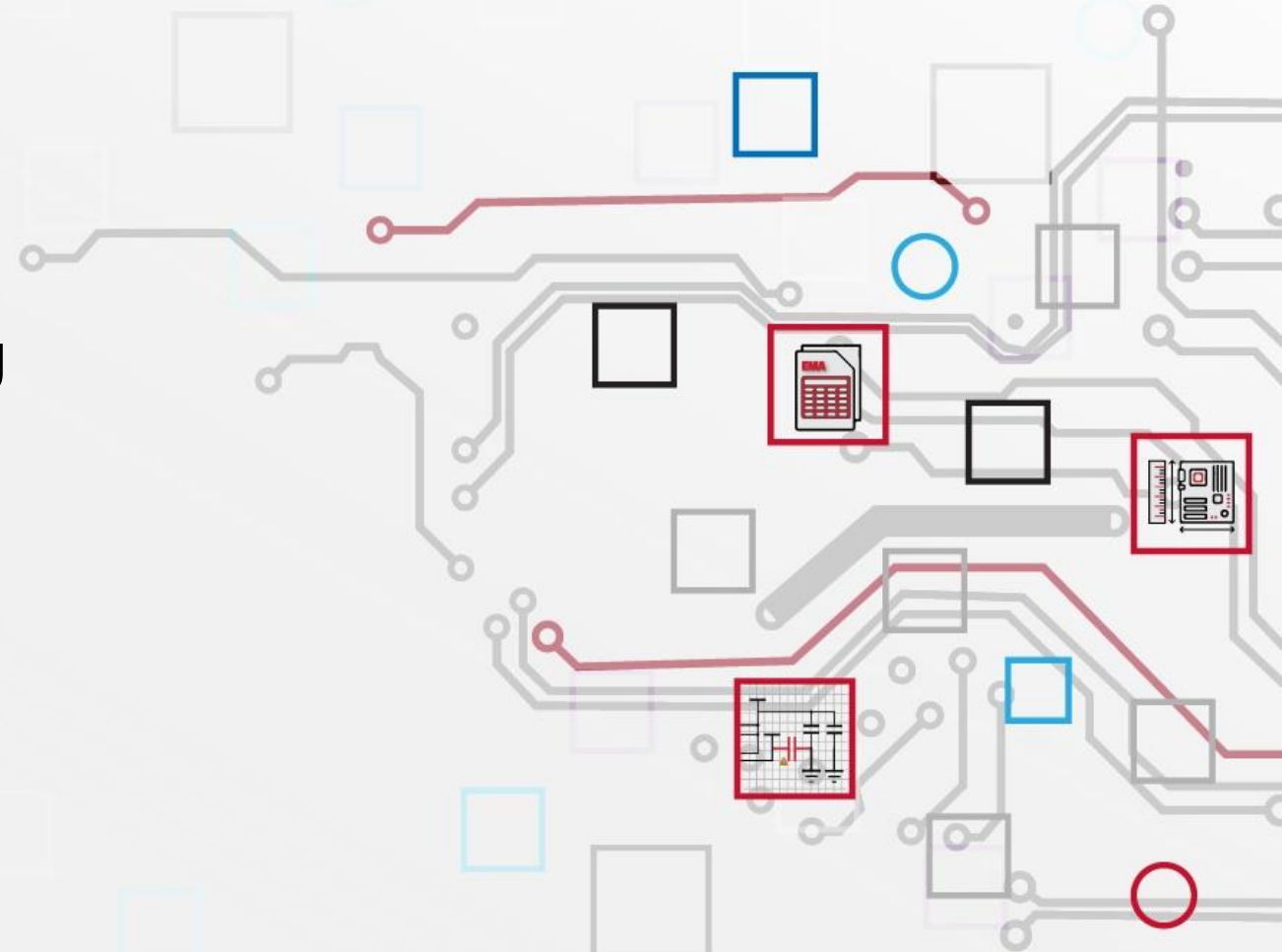
# OrCAD X

Next Generation PCB Design Platform



# Agenda

- Introductions & Housekeeping
- New Partnership
- Common Challenges
- What is OrCAD X?
- Demo
- Recap and Q&A



# New Partnership

**EMA** | Design Automation®

ECAD Experts

30+ Years in PCB Design

Software – Support - Services

+



**HAWK RIDGE** SYSTEMS

MCAD Experts

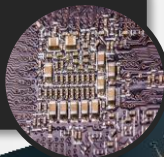
30+ Years in Mechanical Design

Software – Support - Services

Decades of Combined Electromechanical  
Software & Design Expertise

# System Design Must Advance with Industry Challenges

Smaller, Faster, Cheaper



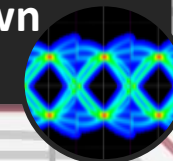
More Work Fewer Resources



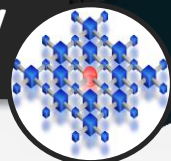
Specialization Bottlenecks



Rules of Thumb Breaking Down



Increasing Design & System Complexity

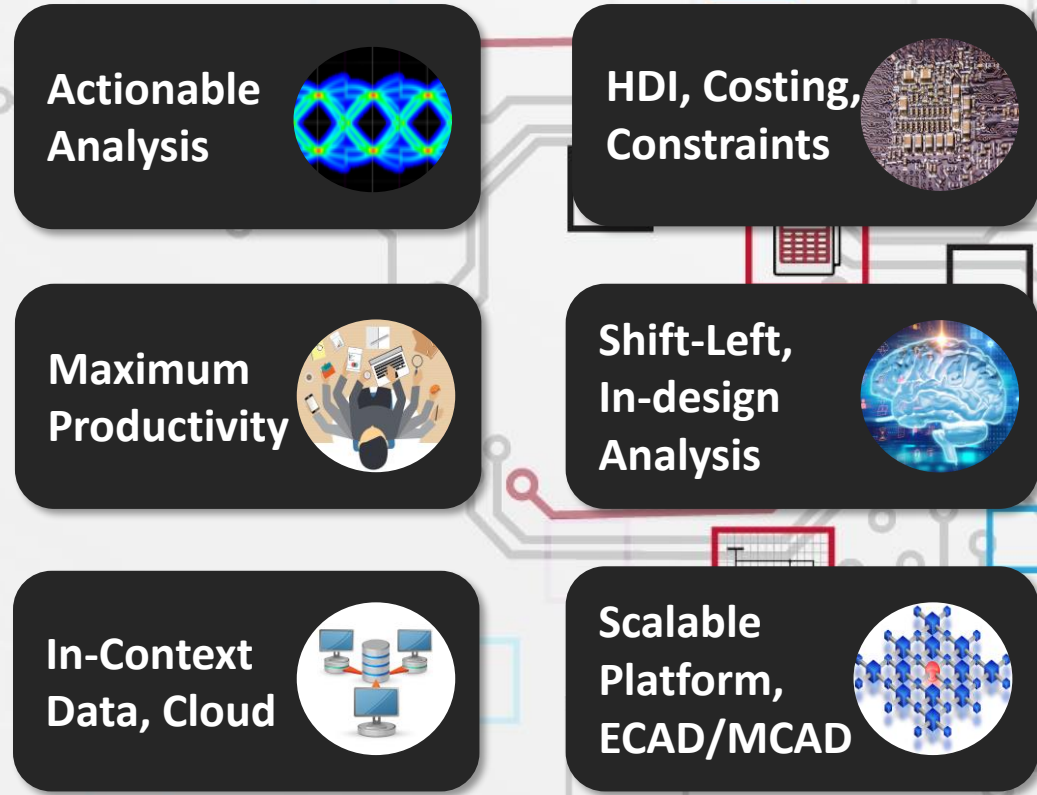
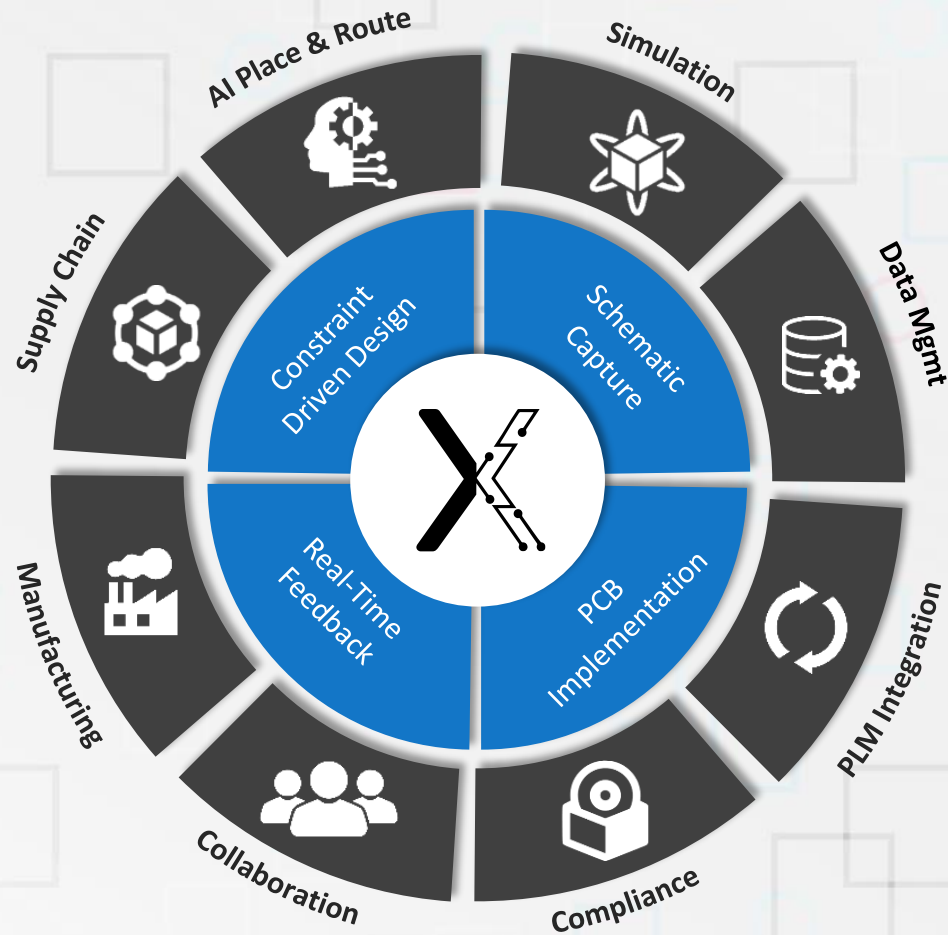


In-Context Data Connectivity & Insights Needed





# What is OrCAD X?

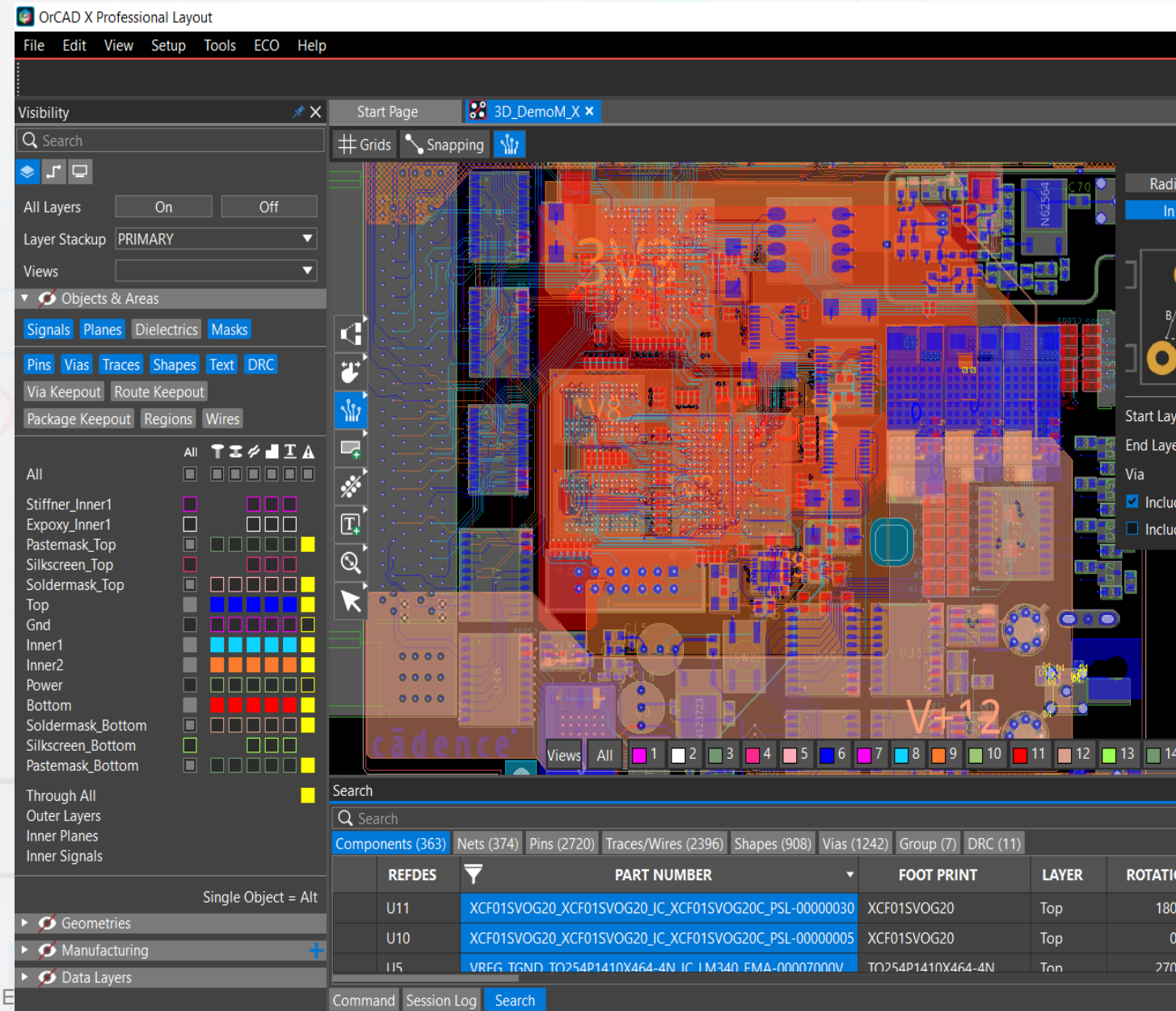


**Platform Designed to Address the Current & Future Needs of Designers**

## LAYOUT & ROUTING

# Presto

- New PCB Layout UX
- Focused on productivity & ease of use combined with powerful layout and routing engines of Allegro
- Fully compatible with OrCAD & Allegro PCB Editor (same .brd)
- Optional. Evaluate and leverage at your pace



LAYOUT & ROUTING

# Presto

- Use model and UI overhaul
- Designed to make information discoverable, data presentation contextual
- Live links to drill into details where applicable
- Built-in search engine with live editing
- Visual help and guidance

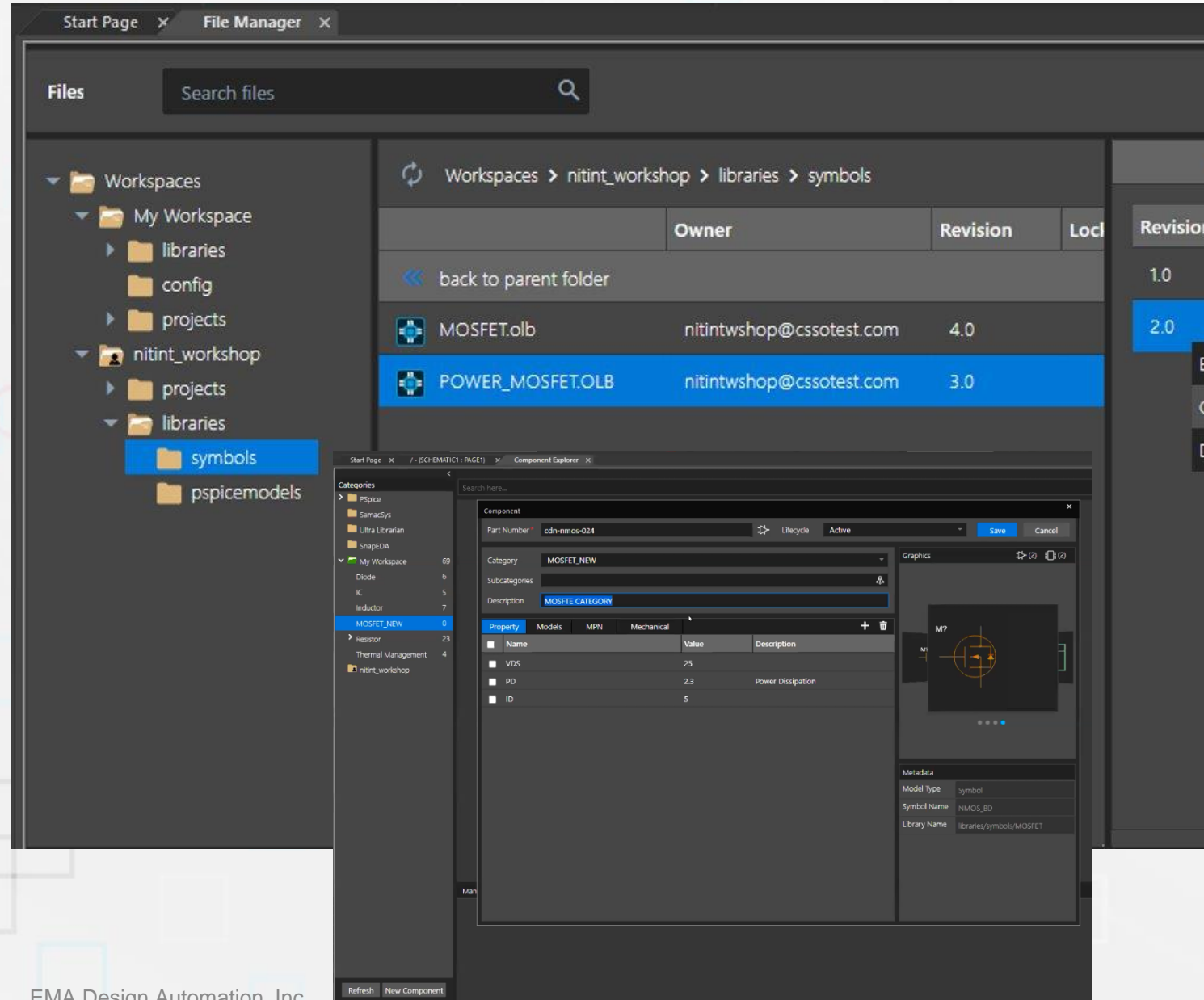
The screenshot displays the Presto PCB design software interface with several key components highlighted by callouts:

- Search & Modify:** A callout pointing to the top search bar and a table of unconnected nets.
- Graphical Guidance:** A callout pointing to the 'Radial' routing tool settings, which include options for Trace Width (A), Channel Space (B), Pin-Via Space (C), Start Layer (Top), End Layer (Bottom), and Via (Net Default).
- Configurable R2M Packaging:** A callout pointing to the right-hand panel, which lists various reports and databases for configuration, such as 'PCB Design Report', 'IPC2581 Database (Fabrication)', and 'Livedoc Fabrication and Assembly Document'.
- Live DRC Panel:** A callout pointing to the bottom-left panel, which shows a pie chart for DRC error counts: Design(13), Electrical(24), Physical(6), and Spacing(21). It also displays 'DRC Errors: 64' and 'Shorting Errors: 8'.
- Contextual Help:** A callout pointing to the bottom-right panel, which shows a 'Shape Utilities' menu with options like 'Merge', 'Intersect', 'Subtract', and 'Exclude', along with a diagram illustrating a 'Select Reference Shape' operation.

CLOUD

# Workspaces

- Cadence Cloud Repository
- Store and share design files and libraries
- No setup and config required



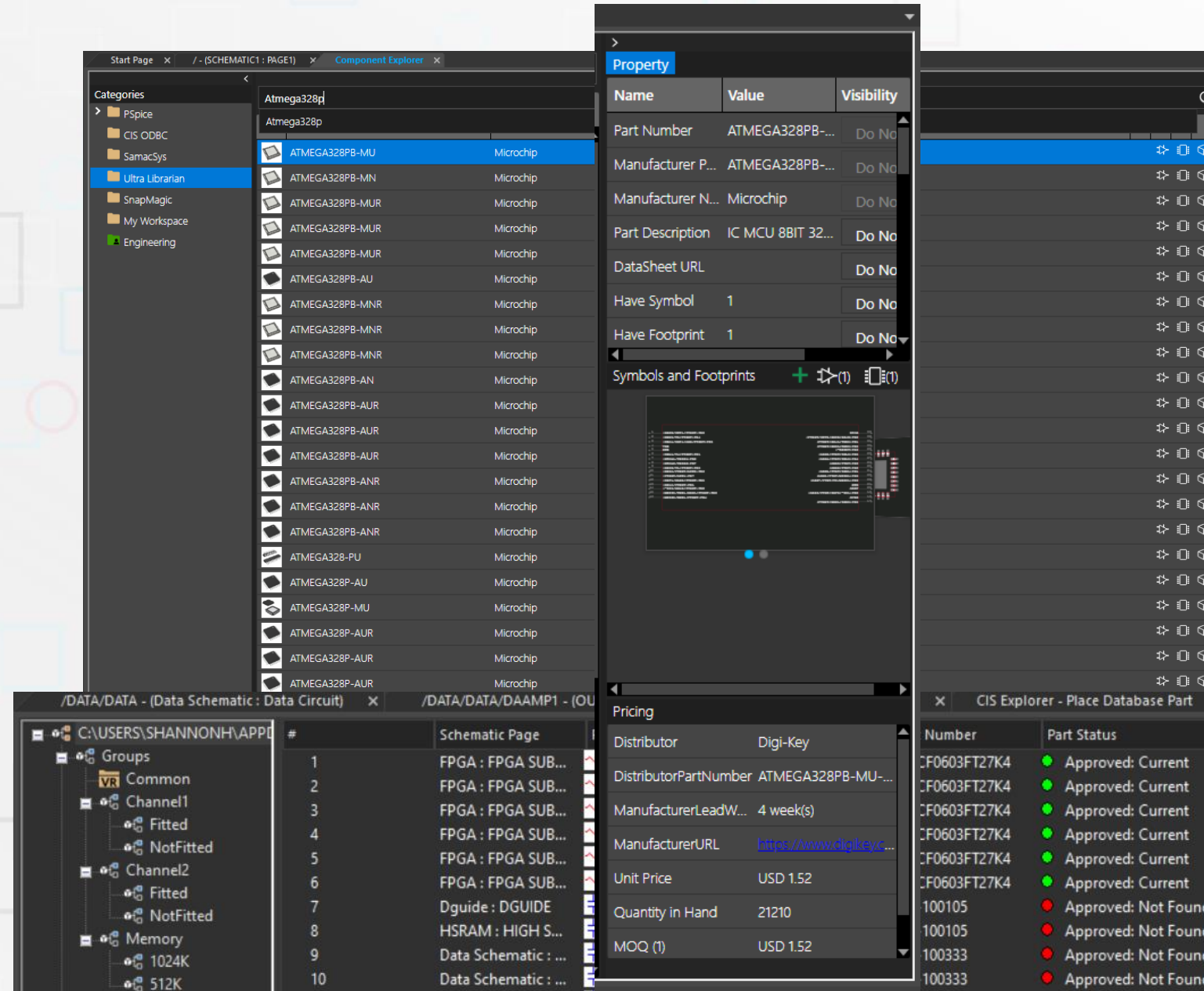


Library & Modeling

# Unified Libraries (CIS)

- Geometries & Parametrics
- Discoverable & shareable
- Track status & updates
- Connect to internal & external data sources
- Cloud & On-prem options

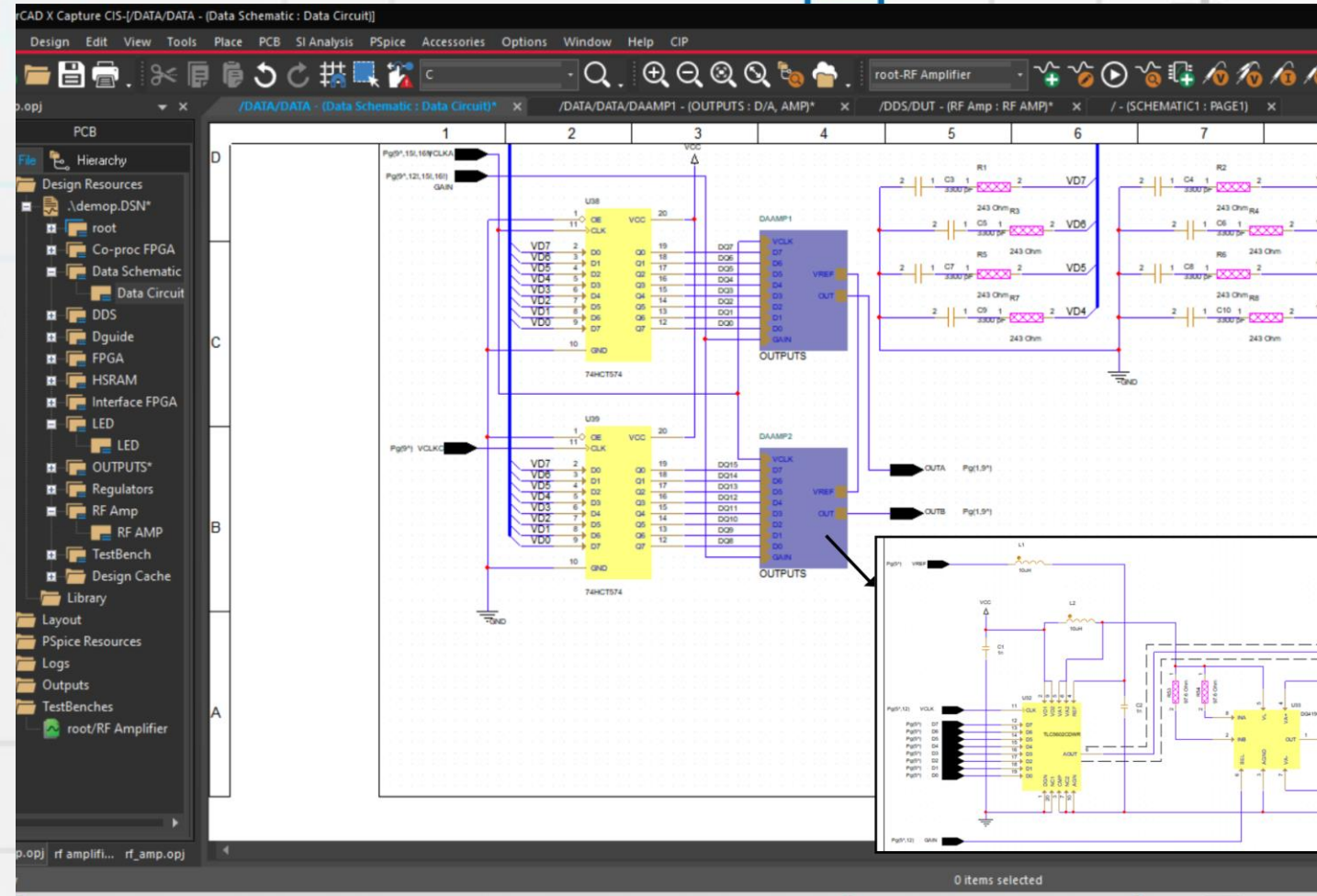
6/24/2024



SCHEMATIC CAPTURE

# Streamlined Design Capture

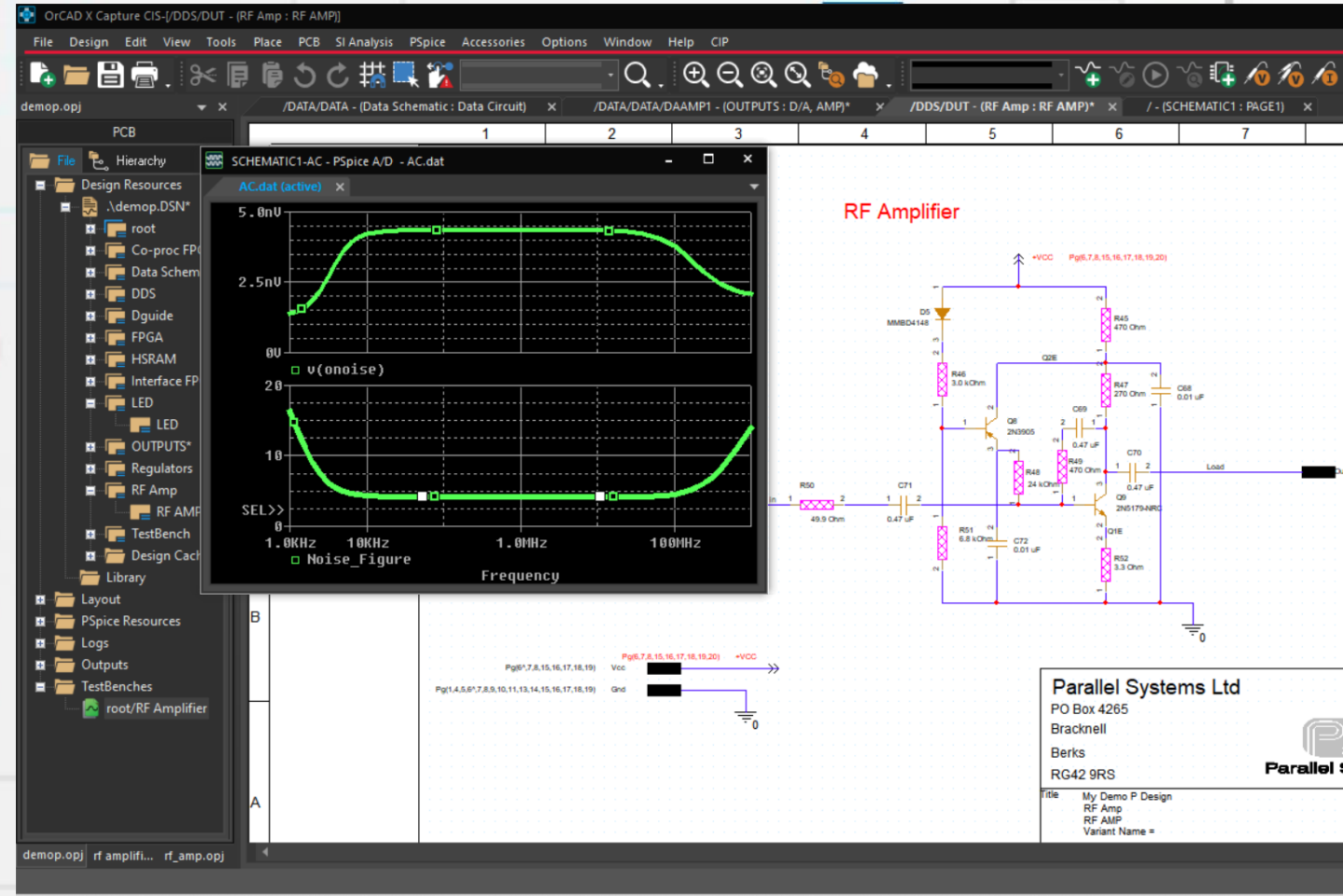
- Hierarchical Design
- Constraint Definition
- Real-Time DRC
- Connected to PCB and Simulation



SHIFT LEFT

# Embedded SPICE Analysis

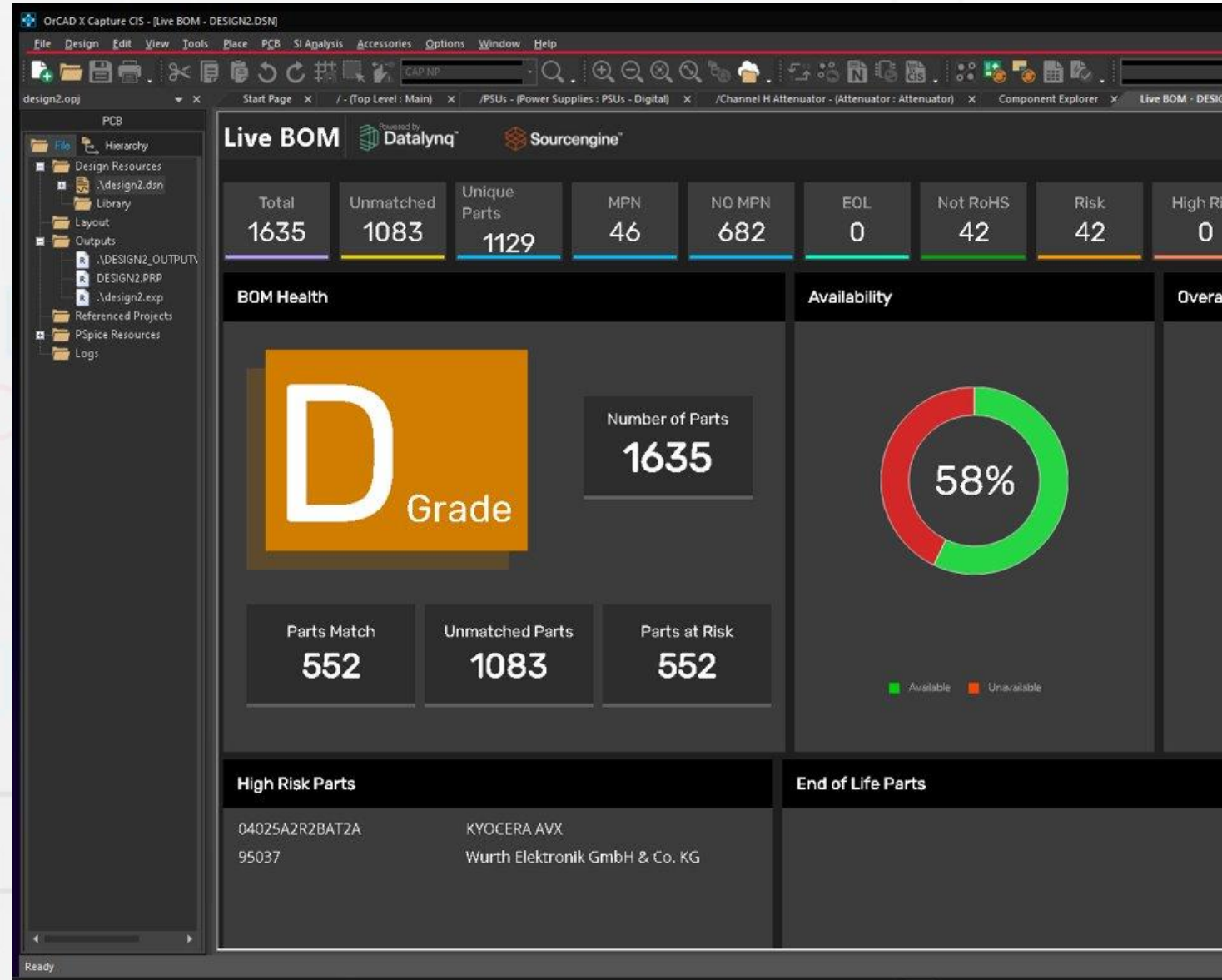
- Run SPICE analysis inside your PCB design environment
- PSpice Testbench functionality to partition design for sim & experimentation
- Perform reliability, yield, stress, and optimization analysis



SUPPLY CHAIN

# LiveBOM

- On-demand supply chain intelligence
- Reviews and provides a grade
- Swap and update parts quickly as needed
- Ensure a compliant and orderable BOM
- Available via Cloud or On-Prem





CORRECT BY CONSTRUCTION

# Constraint Management

- Shift –Left with Full constraints at all levels
- View and set rules regardless of tier
- Ensure correct by construction design
- Physical, Spacing, Electrical Rules, DFM, 3D Constraints
- Real-Time Feedback

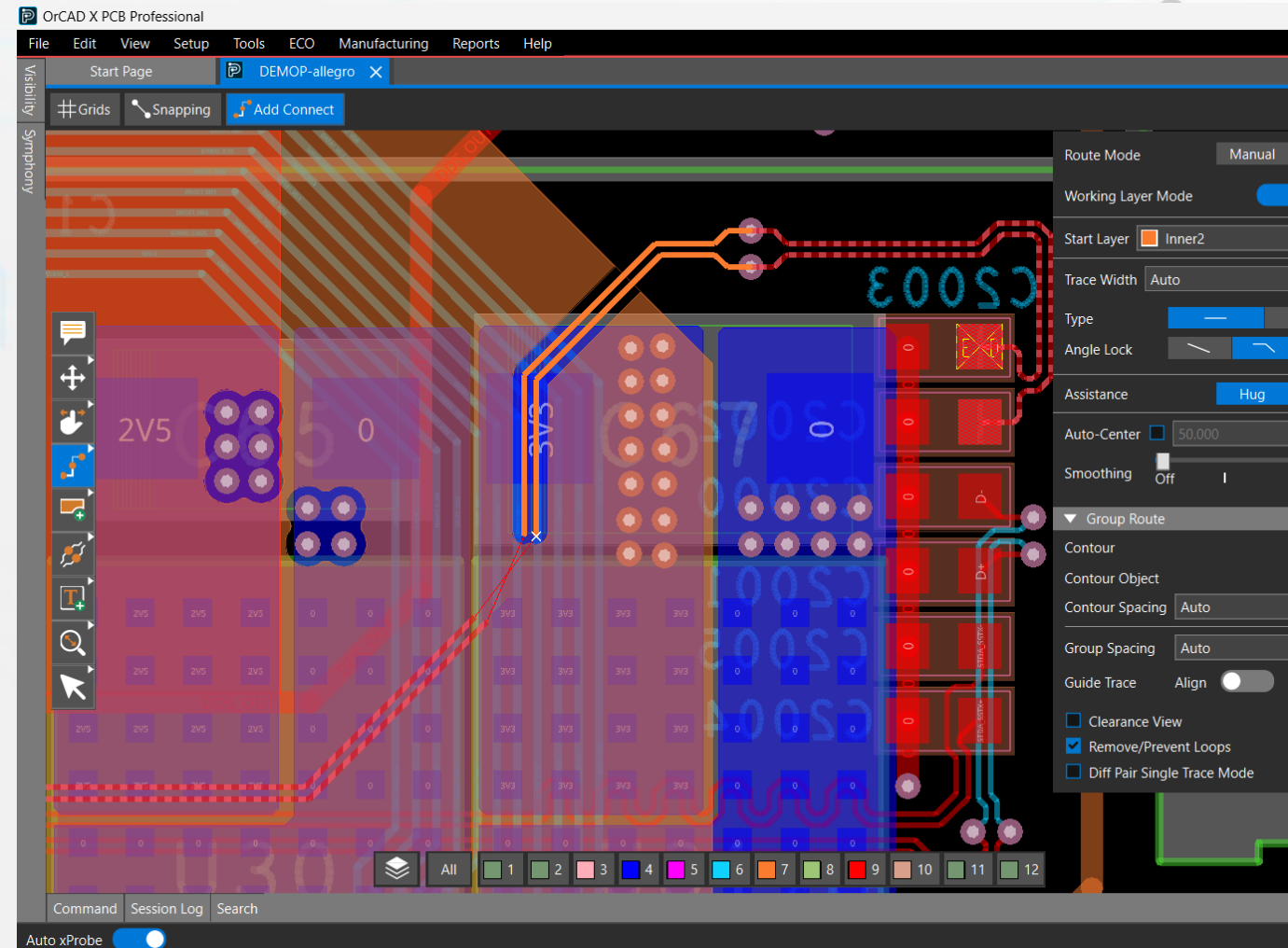
The screenshot displays the software interface for PCB constraints management. The main window is titled "Worksheet Selector" and shows a tree view of "Electrical Constraint Set" with sub-categories like Routing, Wiring, Vias, Impedance, etc. A table on the right lists various constraints with columns for Name, Referenced Electrical CSet, Pin Delay (Pin 1, Pin 2), and Gather Control. A detailed view of a constraint is shown in the bottom right, including location (X: 88.684, Y: 65.056), layer (Bottom), and phase (Static Phase).

Name	Referenced Electrical CSet	Pin Delay		Gather Control
		Pin 1 mil	Pin 2 mil	
*		*	*	*
DDR4_FLY_BY_B0	DDR4_FLY_BY_B0			Ignore
DDR4_FLY_BY_B0	DDR4_FLY_BY_B0			Ignore
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DDR4_DATA	DDR4_DATA			Include
DP_DDR0_DQS_<3>	DDR4_DATA			Include
DP_DDR0_DQS_<3>	DDR4_DATA			Include

REAL-TIME FEEDBACK

# Dynamic Shapes by Default

- All shapes are dynamic self healing by default
- No need to hide or re-pour
- Know impact of shape adjustments as they happen
- Freeze shapes only for special use cases



MAXIMUM PRODUCTIVITY

# X AI

COMING SOON

- AI Assisted PCB Design
- Built inside OrCAD X
- Dramatically reduce time for initial placement and plane creation
- Constraint, Schematic, DFM, and electrically aware

**Allegro X AI Global Placement**  
*Reduce time to design PCBs*

The image shows two side-by-side PCB layout views. The left view, titled 'Human Placement', shows a dense, somewhat disorganized arrangement of components on a board. The right view, titled 'Allegro X AI Global Placement', shows a more organized and compact arrangement of the same components. The components are color-coded in various colors like purple, blue, yellow, and pink.

**Human Placement**  
~ 3 days placement

**Allegro X AI Global Placement**  
75 minutes  
14% better wirelength

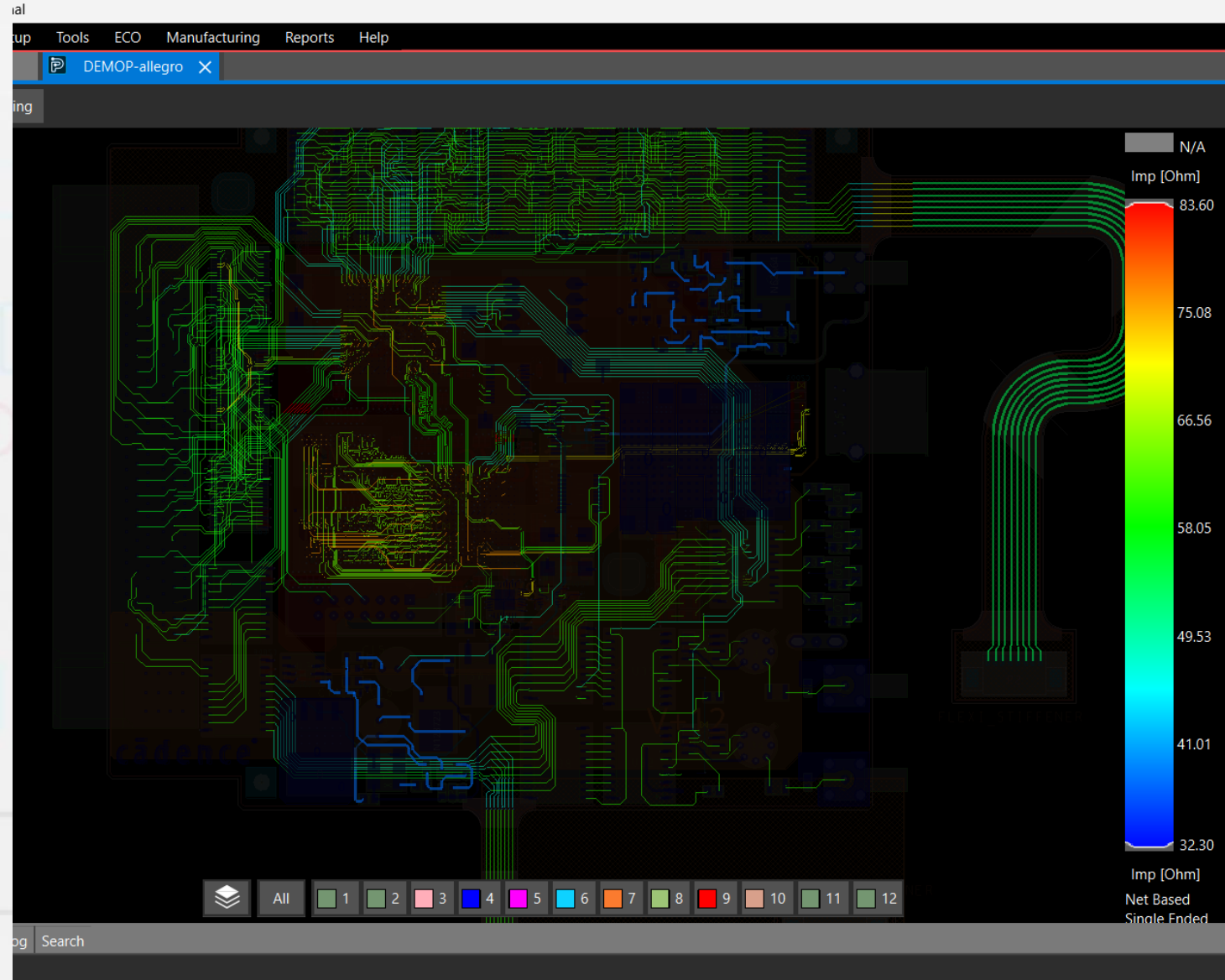
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cadence

SHIFT LEFT

# In-Design Analysis

- Perform electrical analysis inside the design canvas
- Visual overlays make finding and fixing issues quick & effective
- Analysis to cover:
  - Impedance
  - Coupling
  - IR Drop
  - Crosstalk
  - Return path
  - Thermal (coming soon)





CORRECT BY CONSTRUCTION

# DesignTrue DFM

- DFM as you design
- Instantly see issues
- Make RTM a signoff step
- Integrate rules from popular CMs (DesignTrue Portal)

The screenshot displays the Allegro Constraint Manager interface. The main window shows a 'Worksheet Selector' on the left with a tree view of constraint sets. The 'Copper Spacing' constraint set is selected. The main area shows a table of constraint set usage:

Name	Constraint set usage
<Create new>	
SIERRA CIRCUITS_IN...	Etch 13
SIERRA CIRCUITS	Etch 4

Overlaid on the right is the 'DesignTrue Certified Vendor List' window, showing a table of vendors:

Select	Vendor	Logo	Favorite
<input checked="" type="checkbox"/>	<b>OSH Park</b> 311 B Ave, STE B Lake Oswego-97034, Oregon, USA James Neal 503-616-2484 cadence@oshpark.com http://OSHPark.com		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<b>Tempo Automation</b> 2460 Alameda St San Francisco-94103, California, USA Lorenzo Ramirez 4153201261 dfm@tempoautomation.com https://www.tempoautomation.com/		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<b>CircuitHub</b> 14 Industrial Drive East South Deerfield-01373, Massachusetts, USA Andrew Seddon 4086009697 andrew@circuthub.com http://circuthub.com		<input checked="" type="checkbox"/>

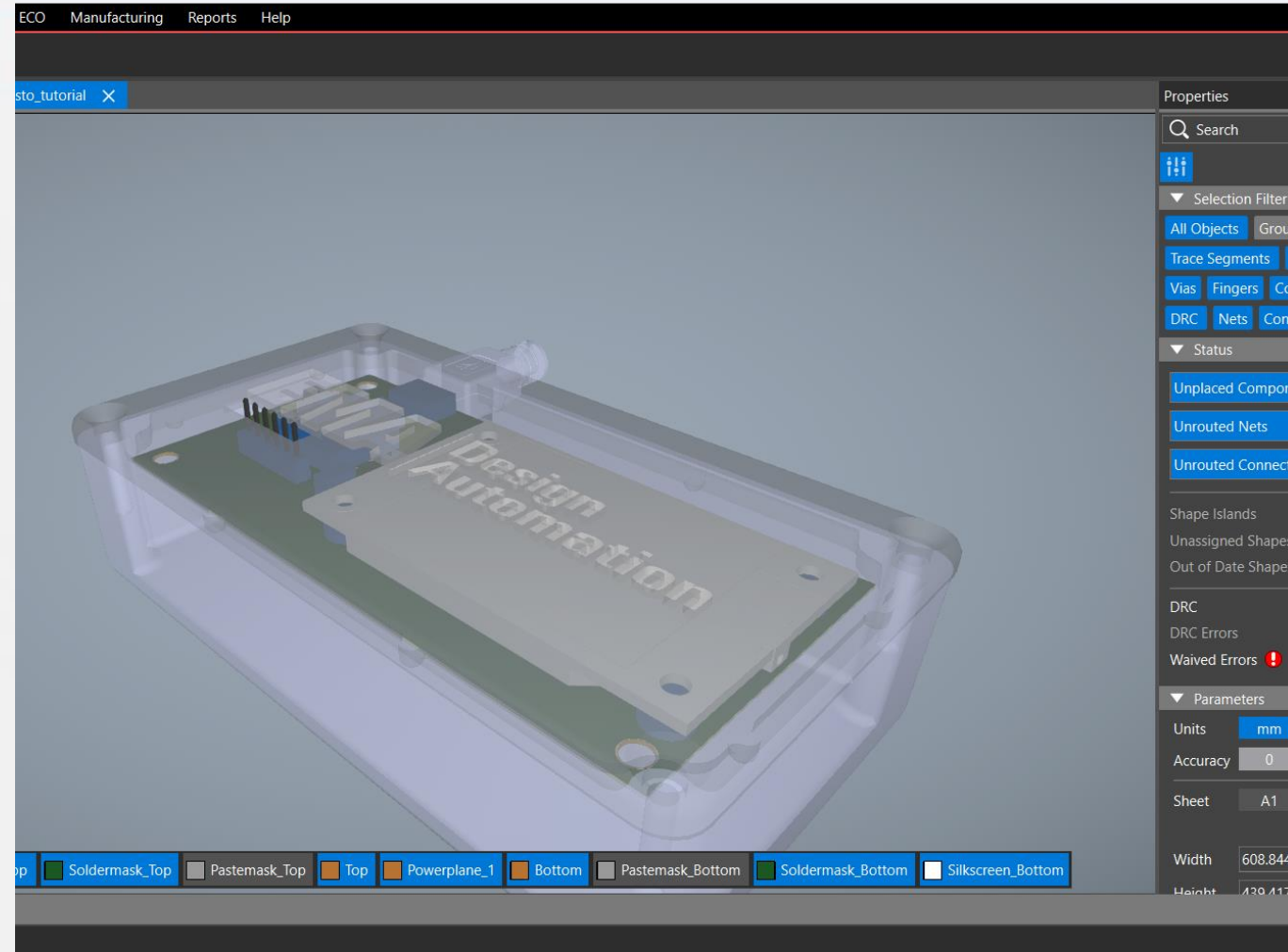
At the bottom right, a 'Design for Fabrication' status window shows a pie chart and error counts:

- Out of Date Shapes: 0
- Design for Fabrication: Up to Date
- Annular Ring: 16
- Copper Spacing: 56
- DRC Errors: 72
- Shorting Errors: 0
- Waived Errors: 0
- Waived Shorting Errors: 0
- Highlight DRC on Canvas:

ELECTROMECHANICAL DESIGN

# ECAD/MCAD

- New 3D engine, Built for performance
- Real-time 3D constraints
- Import mechanical elements – export design for mechanical integration



ELECTROMECHANICAL DESIGN

# ECAD/MCAD

- Enhanced ECAD/MCAD Integration
- Dassault Partnership
- MCAD Flows Supported



ptc

**SOLIDWORKS**

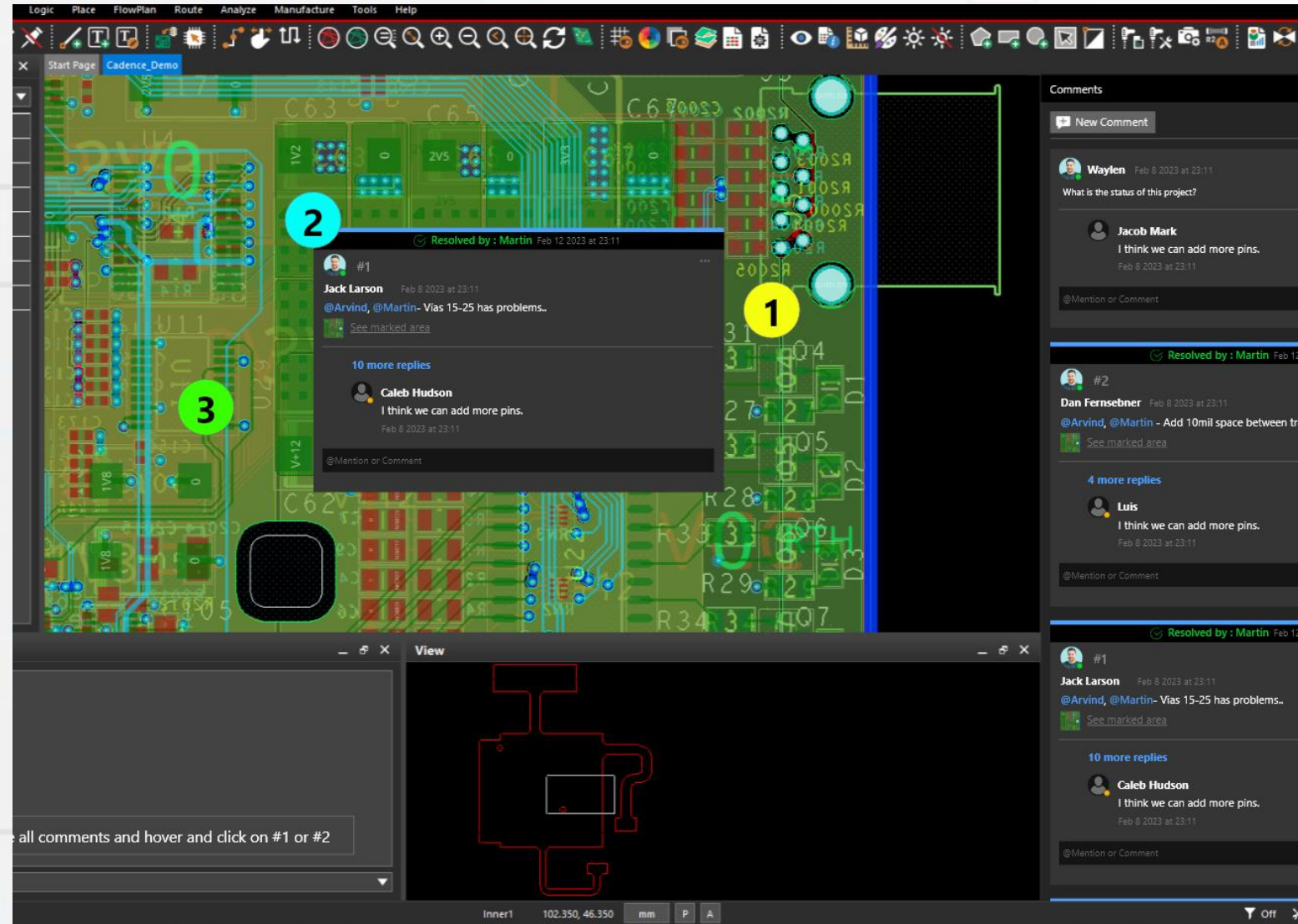




COLLABORATION

# Review & Markup

- Embedded Markup Layer
- Like GoogleDocs
- Stored in PCB database
- Commenting, Resolve, history tracking

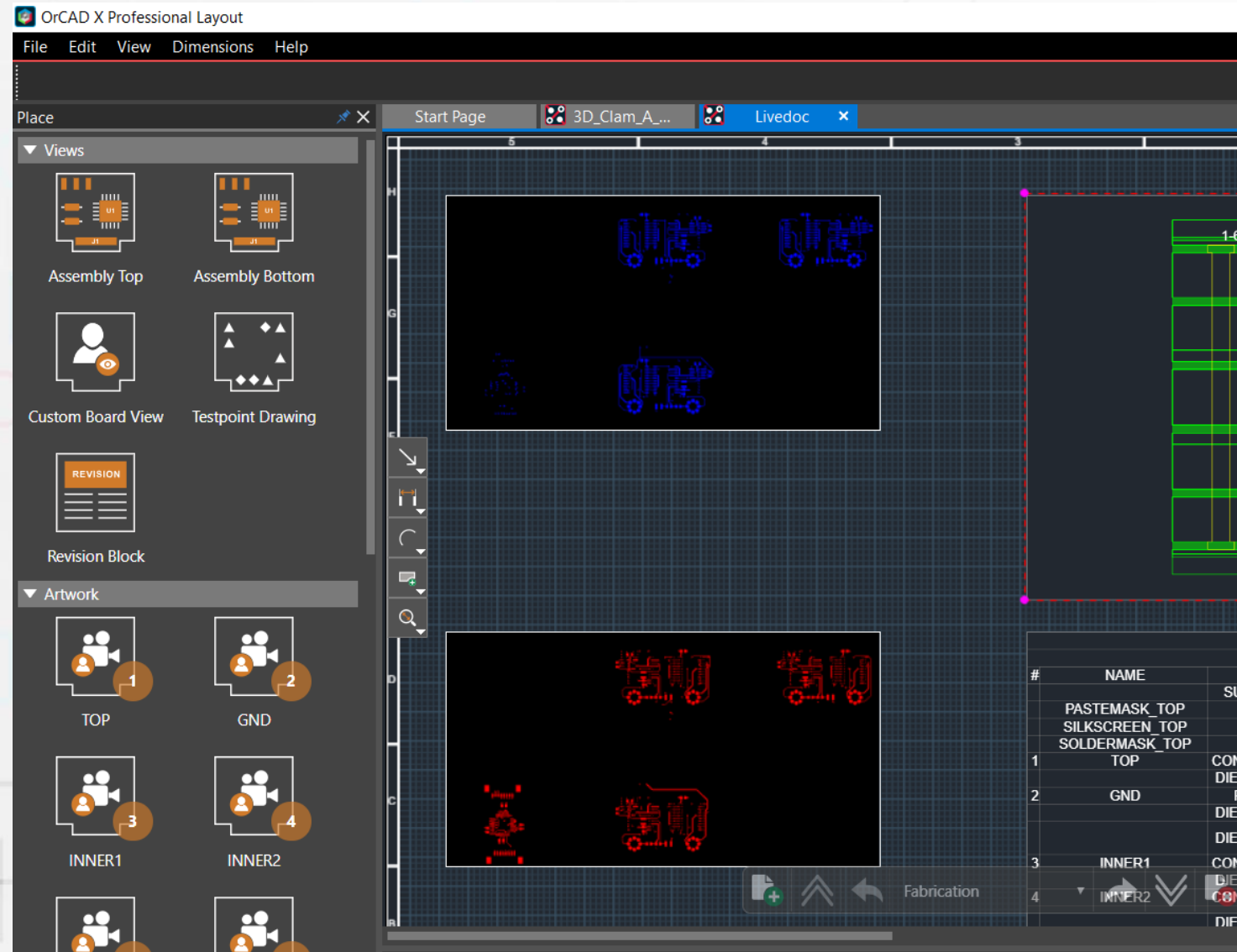




DOCUMENT

# LiveDoc

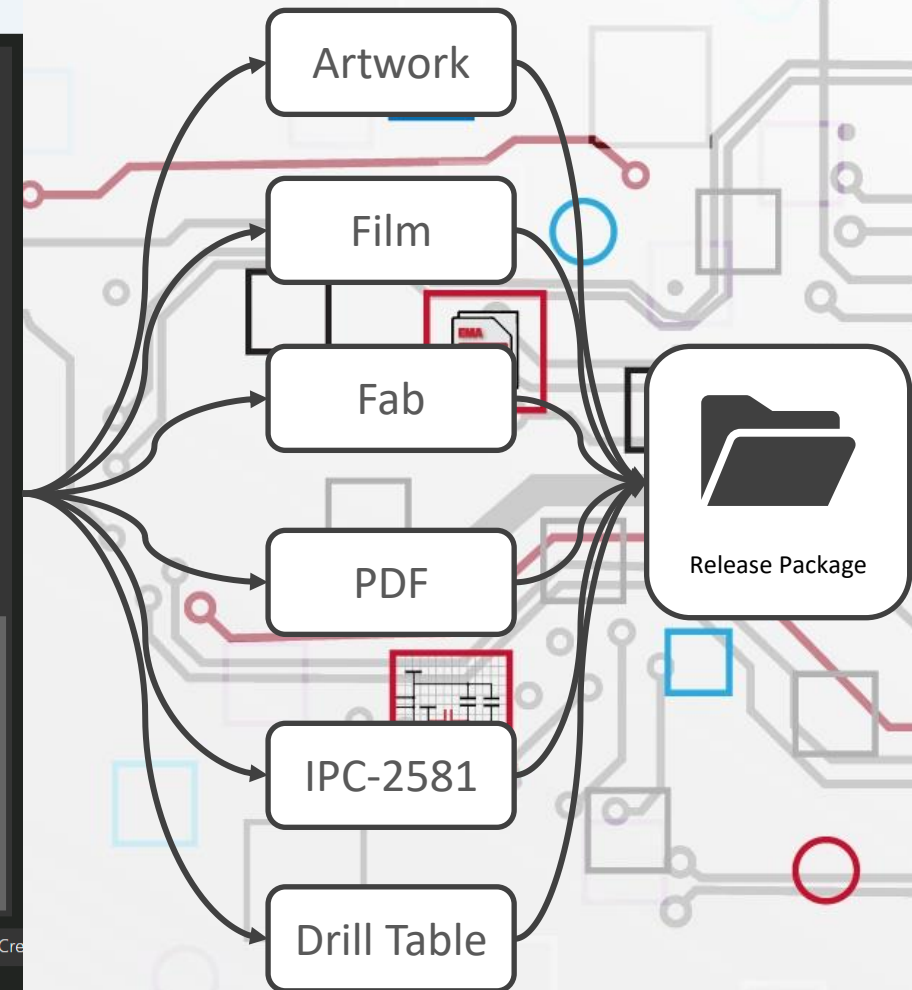
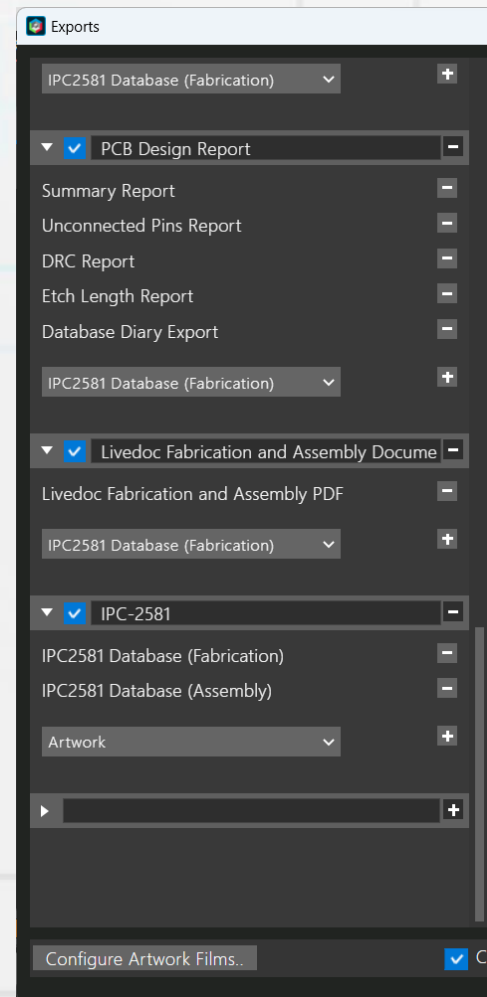
- Automated PCB Documentation
- Live Updates
- Template Driven
- Ensure docs are complete, up to date and ready



RTM PACKAGE

# Release Packager

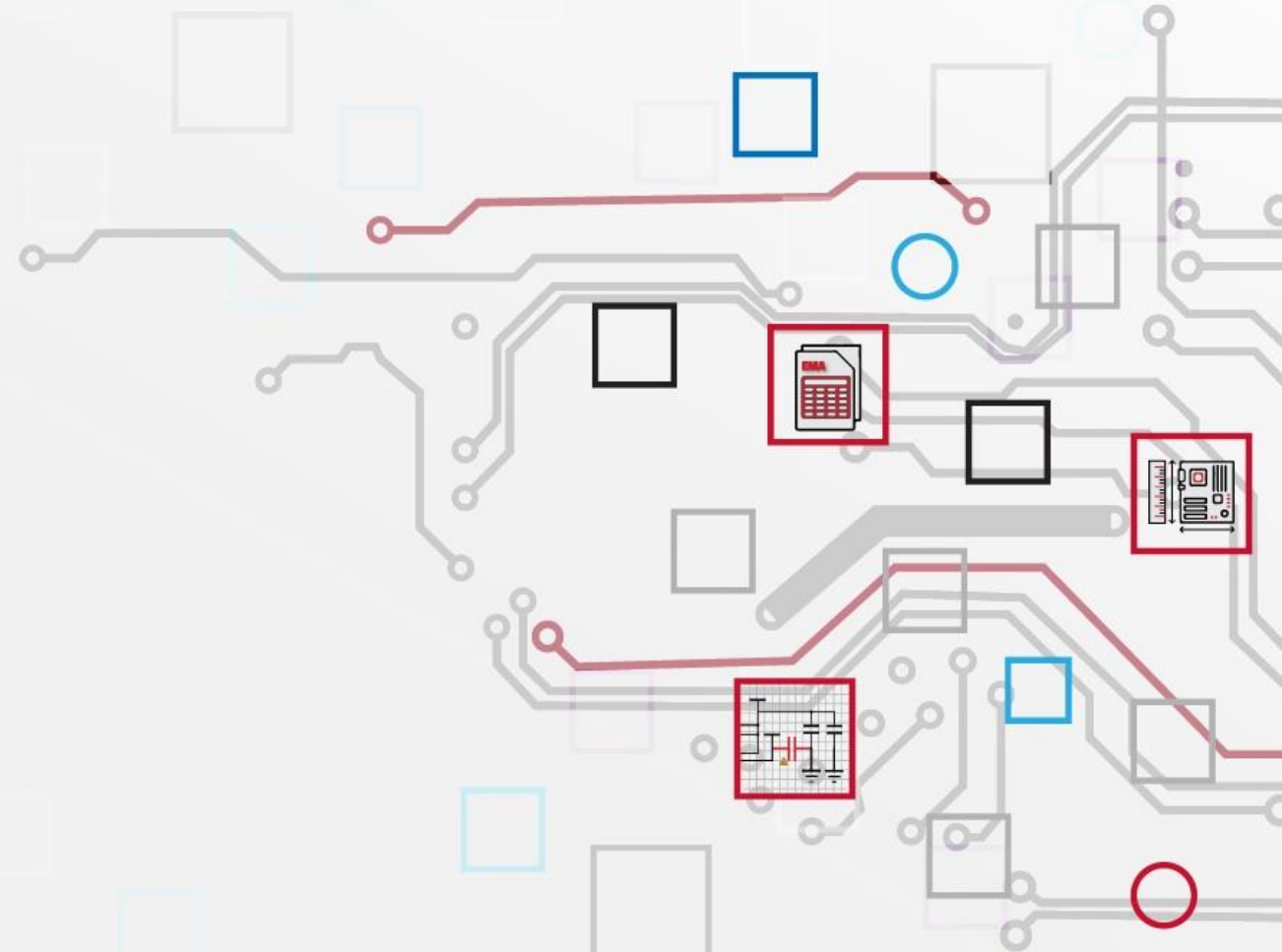
- Define & Customize Release Package
- All files & reports generated and placed in Zip file for delivery
- Template driven, always based on latest design data



# OrCAD X Platform Benefits

- ✓ Increase engineer efficiency & productivity
- ✓ Enable early analysis & optimization
- ✓ Provide in-context data for proactive problem solving
- ✓ Reduce / eliminate late-stage errors – shift left
- ✓ Increase throughput, predictability, & accuracy

# Demo



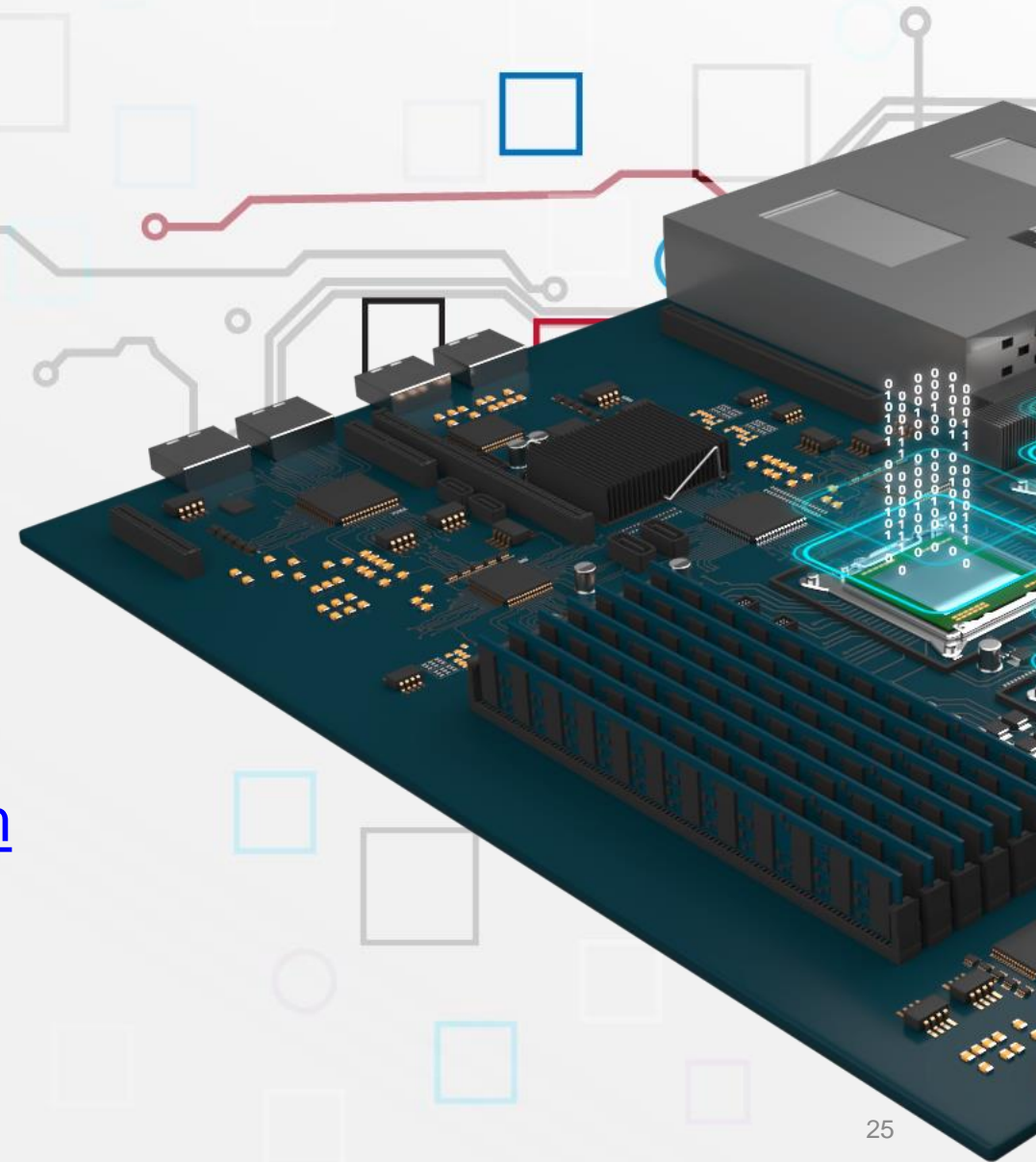


# Thank You

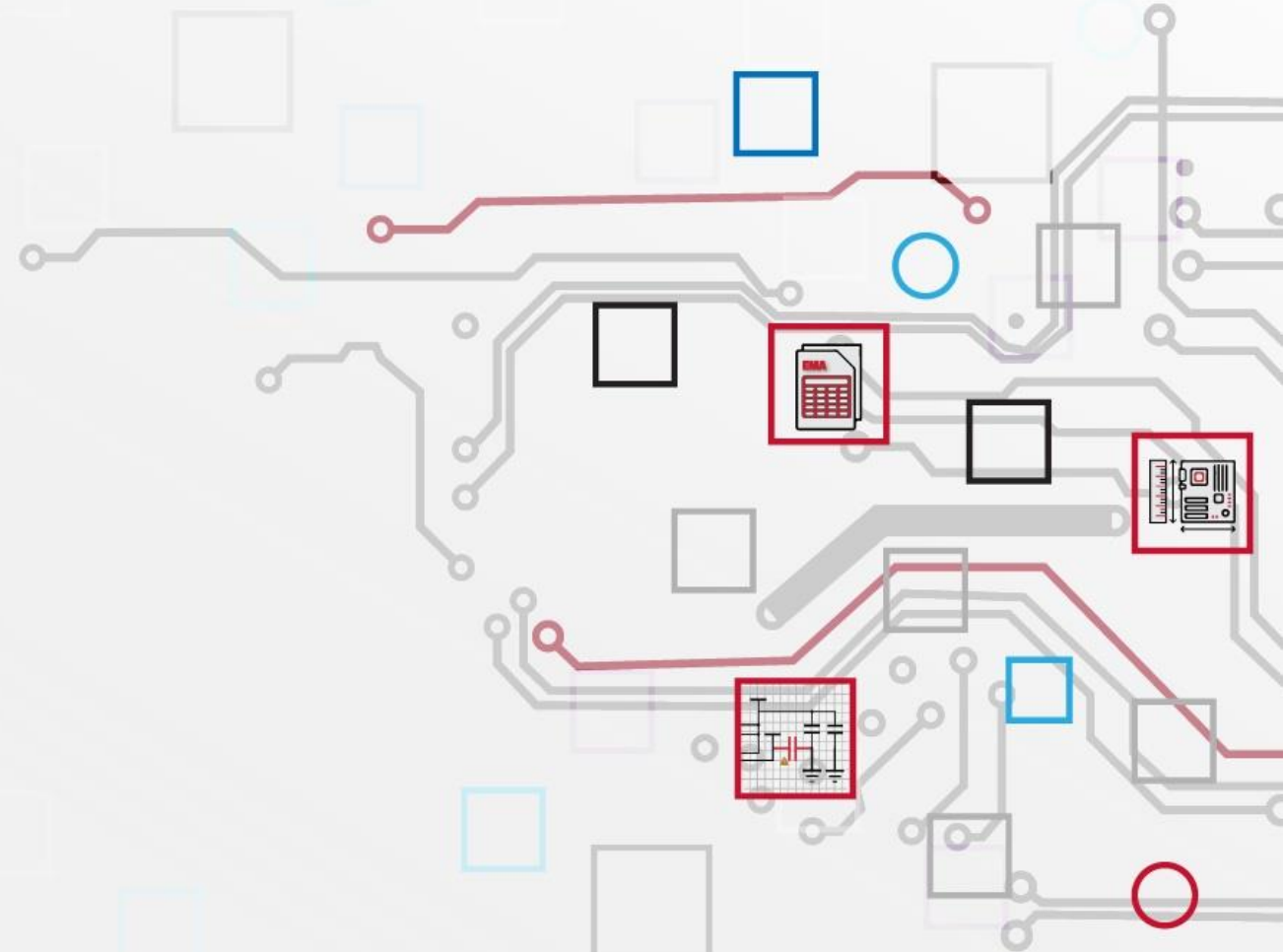
Questions?

Contact us at:

[info@ema-eda.com](mailto:info@ema-eda.com) | [www.ema-eda.com](http://www.ema-eda.com)



# Backup



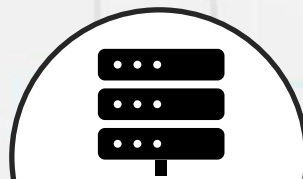
# What's NeXt

The themes driving Cadence System Design Solutions for the next generation of electronics



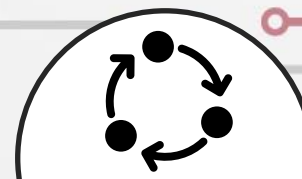
## MAXIMUM PERFORMANCE

Drive step function performance gains with each release



## HIGHEST CAPACITY

Deliver scalable capacity to handle exponentially expanding datasets



## SEAMLESS CONNECTIVITY

Enable data integration and collaboration throughout the flow



## OPTIMIZED FOR PRODUCTIVITY

Produce a frictionless user experience for maximum throughput

SIGRITY X

OrCAD X

ALLEGRO X

Optimality

X AI

JedAI

Cloud/AI/ML ENABLED