



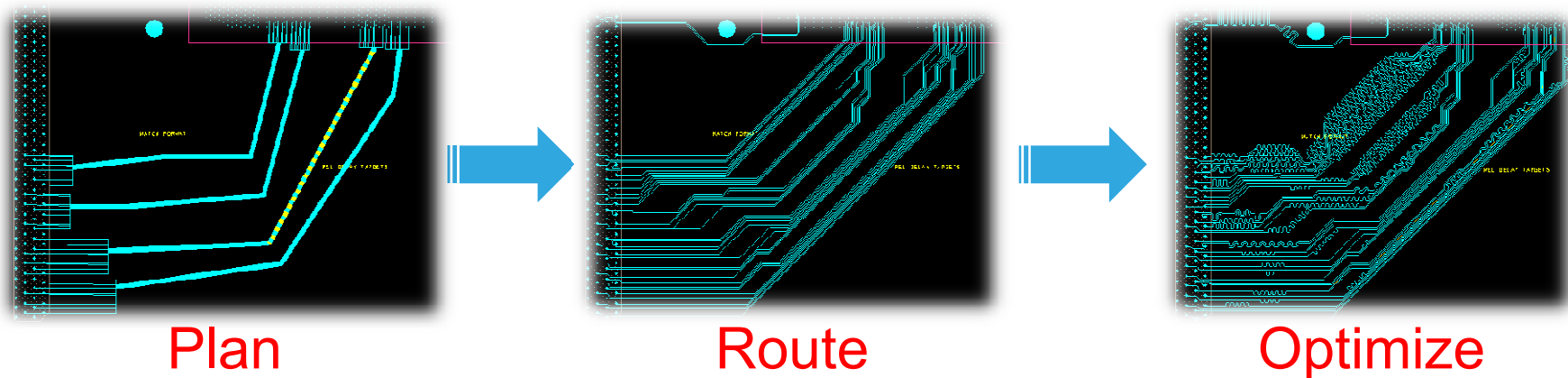
# Allegro Auto Interactive Routing

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# Accelerating time to route interconnects Using unique plan-route-optimize approach

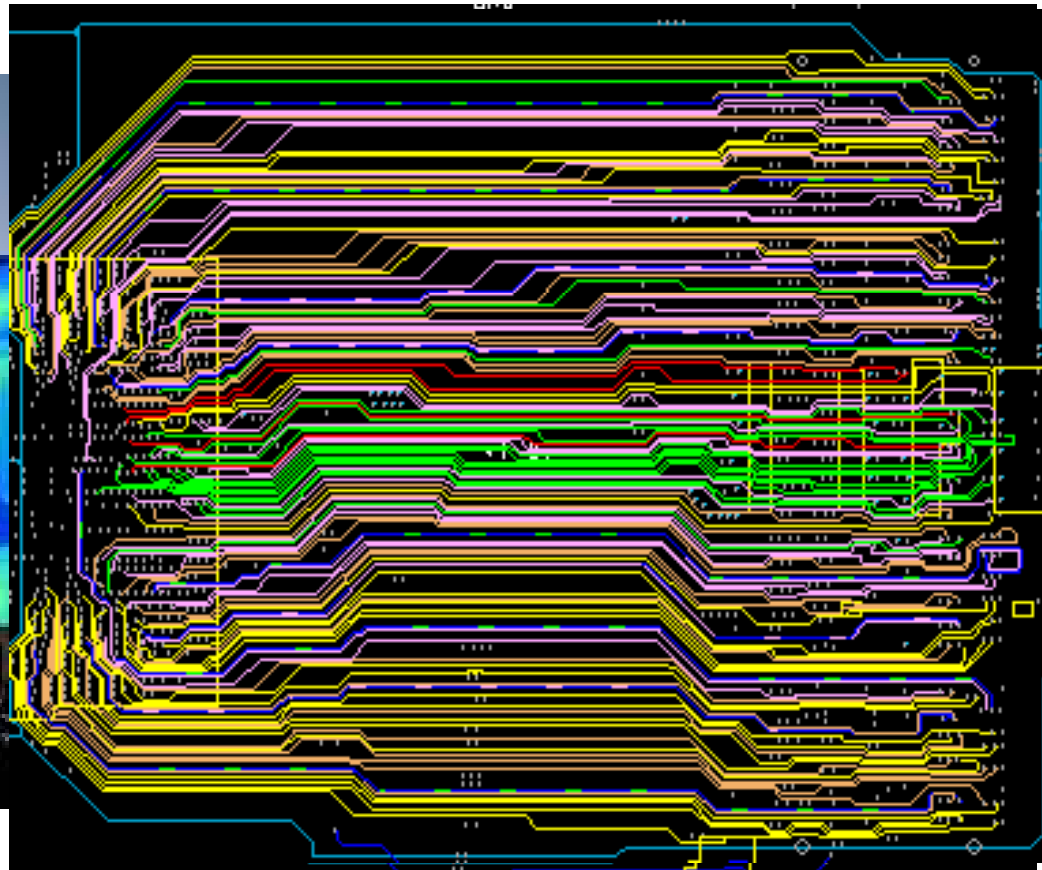
- New auto-interactive approach allows designers to use it without changing methodologies
- Route and optimize interconnects significantly faster utilizing automation and interactive utilities
- New capabilities in automation significantly improve throughput



# Timing Vision

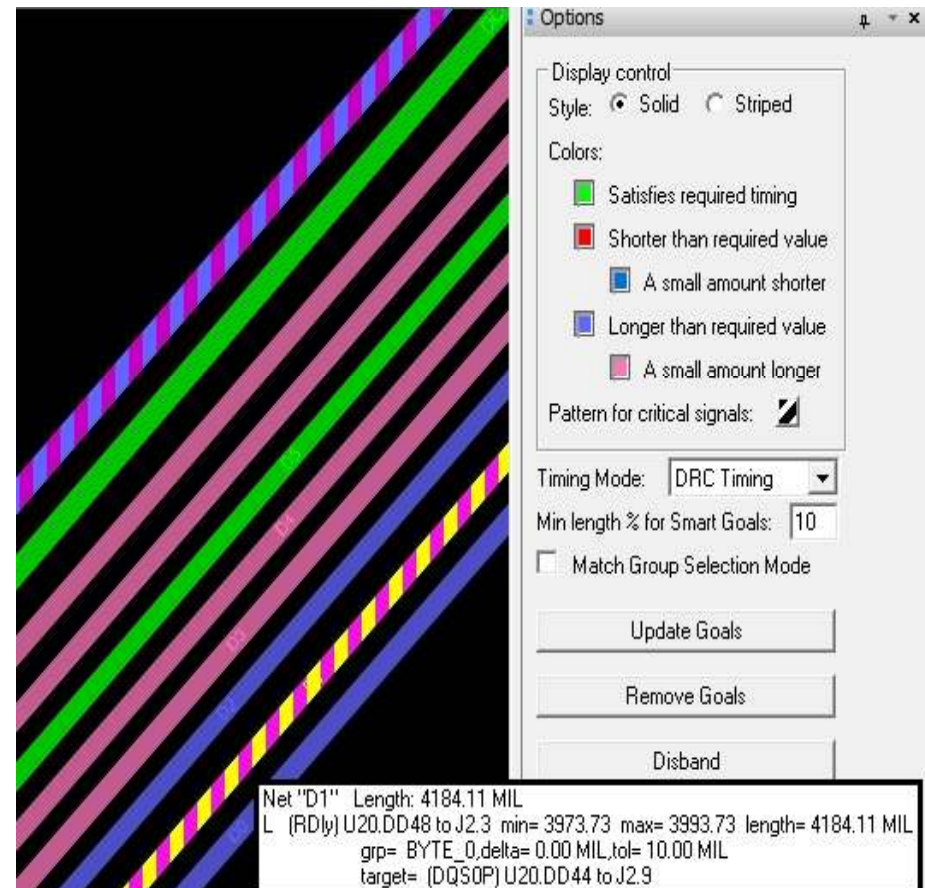


- Allow users to see beyond their physical routing when doing Delay Resolution



# Timing Vision - Delay Resolution

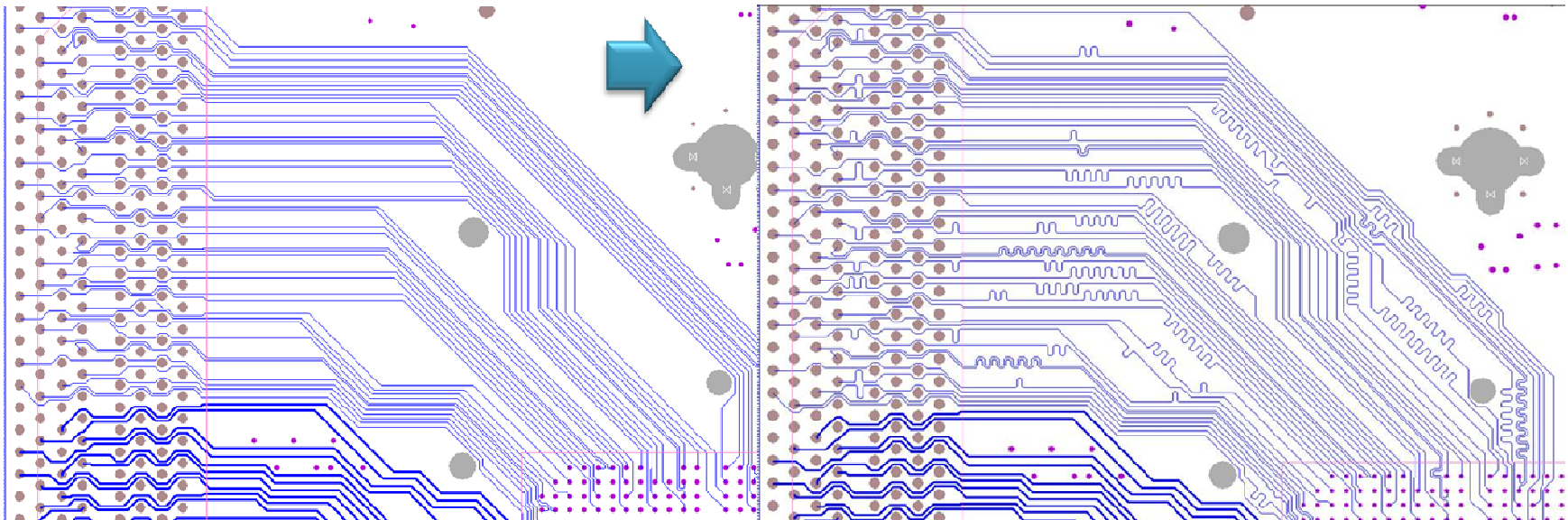
- Allegro Canvas Based
  - Does NOT Need CM Open
  - Performance Improvement
  - Better User Response
- Color Coded
  - Help Guide User to Problems
- Stipple/Striping Pattern
  - Indicate “Master” Nets
- Timing Vision DataTips
  - Smart Timing Rule Data





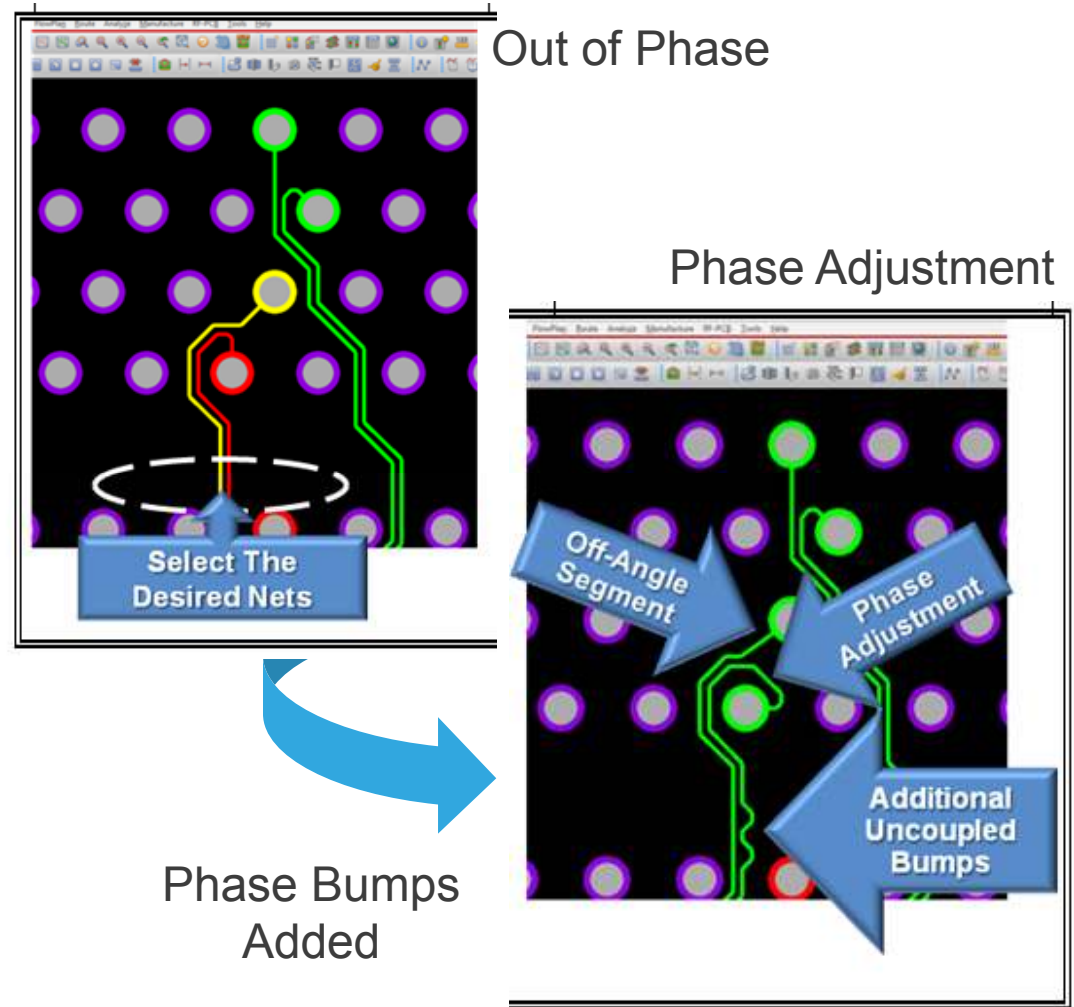
# Auto-interactive Delay Tune (AiDT)

- Select a set of routed signals, AiDT adjusts timing of signals to meet the constraints.
- Shortens time to tune high-speed signals by 30-50%



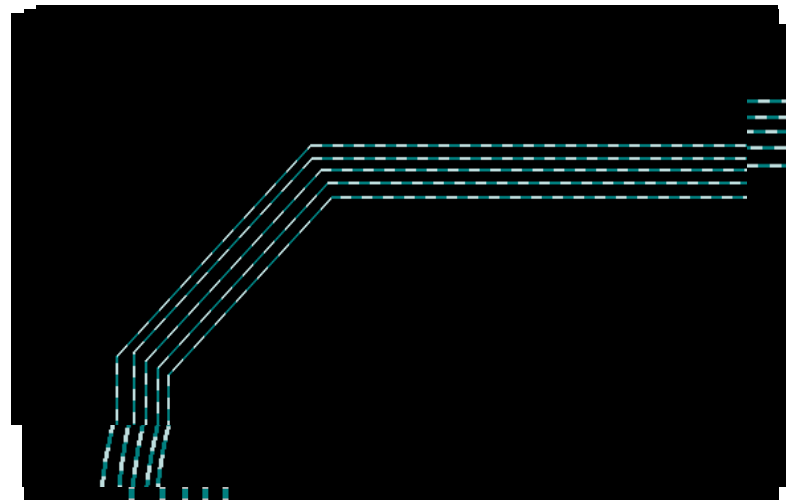
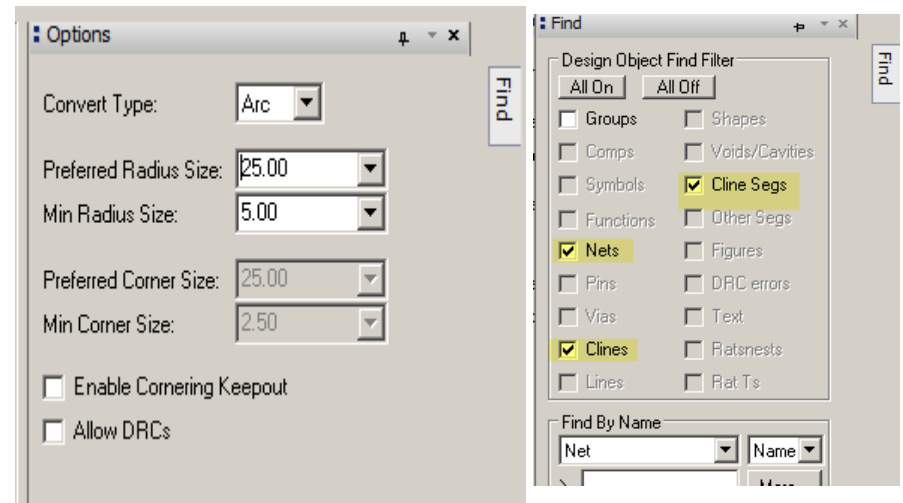
# Auto-interactive Phase Tuning (AiPT)

- Meet differential pair phase requirements easily
- Static and dynamic phase compensation
- User driven controlled compensation techniques



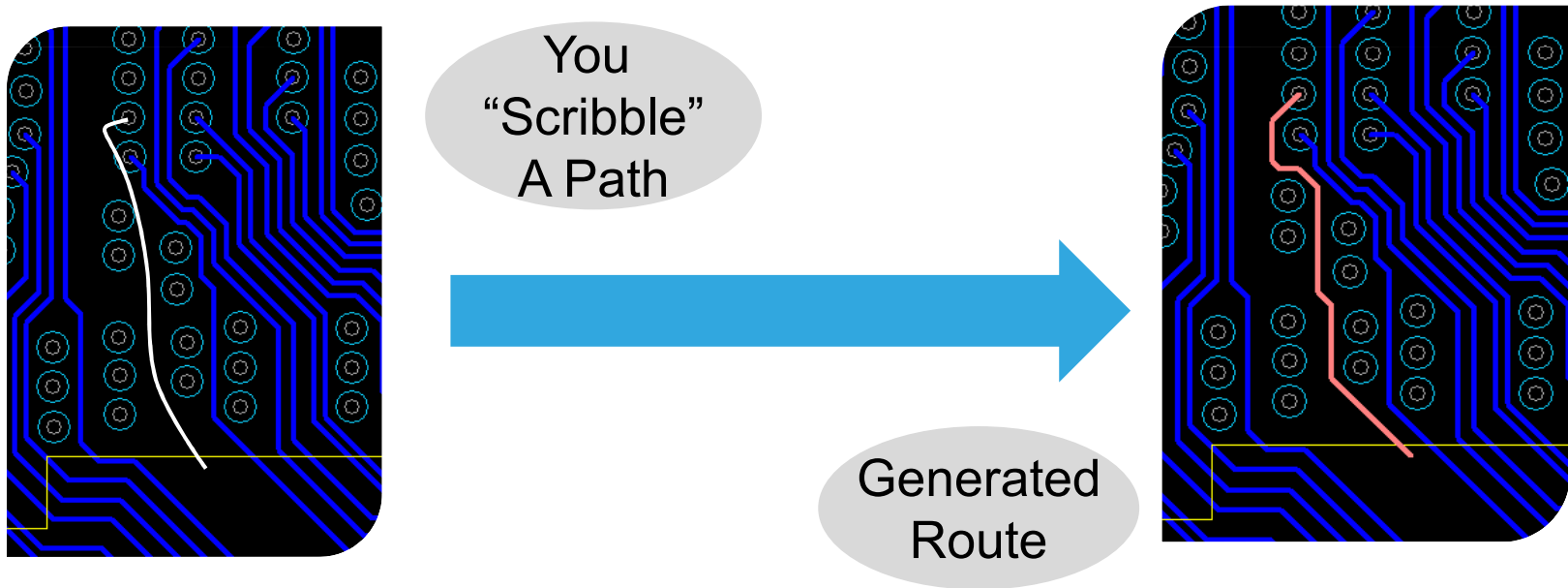
# Auto Interactive Convert Corner (AiCC)

- New Auto-Interactive “Corner Conversion” Utility
- Works on ...
  - Nets
  - Clines
  - Segments
- Designed to convert corners on
  - Single Nets/Diff Pairs
  - Tuning Patterns
  - Off Angle Routes
- Convert 45 corners to arc
- Convert Arc corners to 45
- Use Min and Preferred settings to control corner



# Auto-interactive Add Connect (AiAC) -Scribble mode

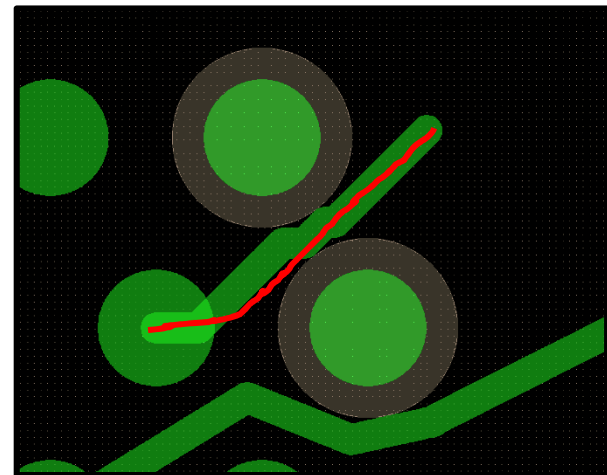
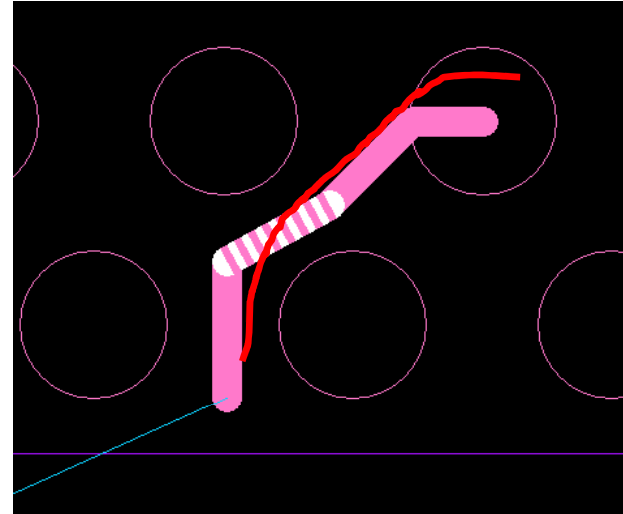
- Auto-route based on user scribbled path (Route to cursor)
  - Auto-router generated etch from last pick to cursor
- Next generation of Add Connect
- Route-centric automation through a cursor driven Environment





# Auto-interactive Add Connect (AiAC) -Scribble mode

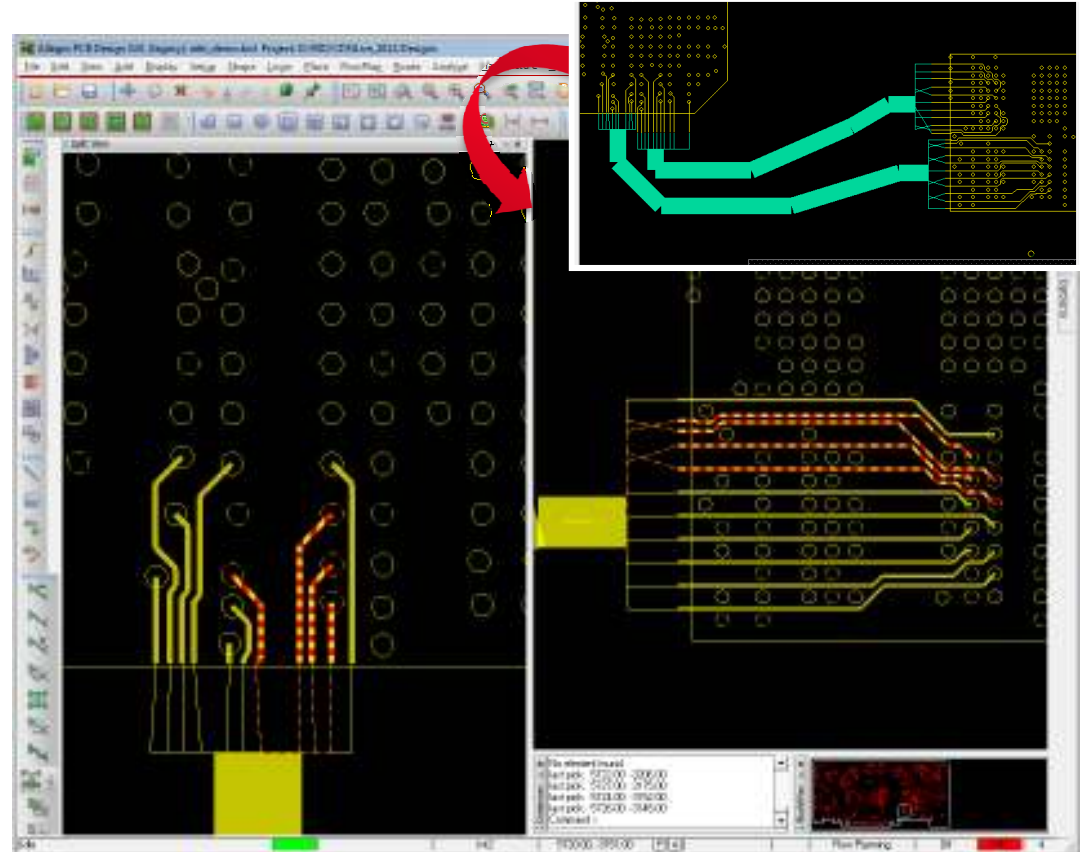
- **Off angle fit**
  - Scribble through a channel that requires off-angle line(s) at pinch point
- **Exact fit**
  - Scribble through a channel that has exact gap for a 45 route solution



# Auto-interactive Breakout Tuning (AiBT)

## Save time to break-out and route

- Helps you plan breakout of both components
  - An Interface Breakout (Both-Ends) Analysis
  - Canvas driven inputs for direction, distance, sequence
  - Rat ordering and layering
- Split Screen to view both ends
- Reduce routing steps and improve efficiency

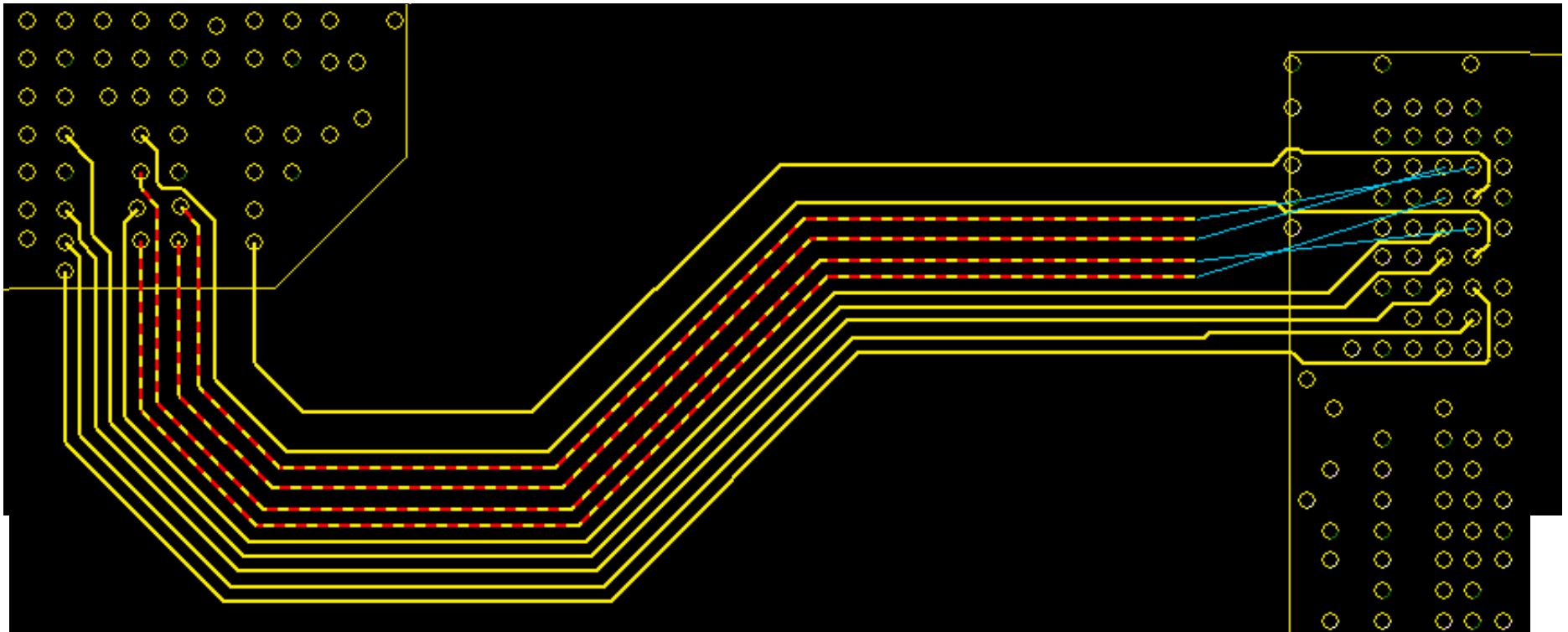


Split Views allows working on both ends of an interface zoomed-in

# Auto interactive Break-out Tuning (AiBT)

## Common practice today

Manual breakout one side of the bus  
Route bus to edge of other component  
Finish connections based on rats, redo routing and breakout on both side



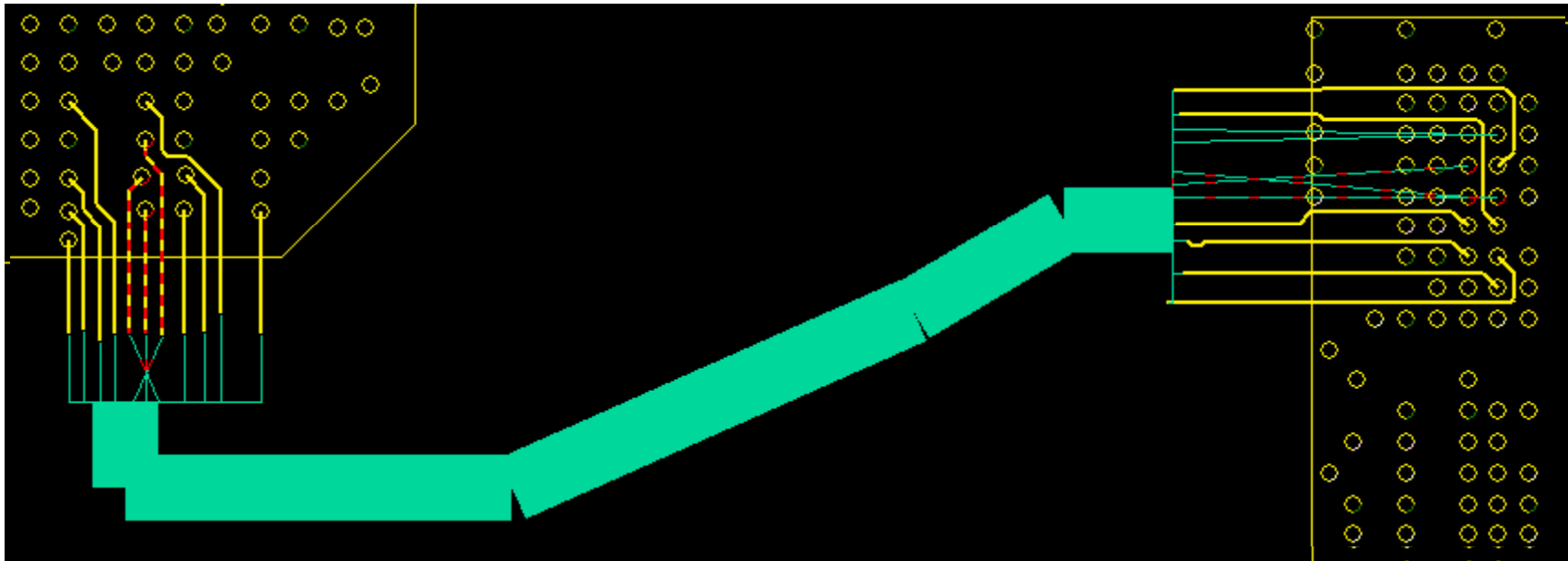
# Auto-interactive Break-out Tuning (AiBT)

Faster routing with bundle rat order and layer control

Manual breakout one side, drive rat sequence through bundle

Breakout other side to match sequence

Only redo breakouts, use sequence to iterate changes



- Emulate bus routing with a bundle
  - Use bundles to order/layer rats
- Reduce routing steps & Improve efficiency

# Want more information?

- Contact John Carney
  - [Jcarney@cadence.com](mailto:Jcarney@cadence.com)
- Check us out on Youtube!