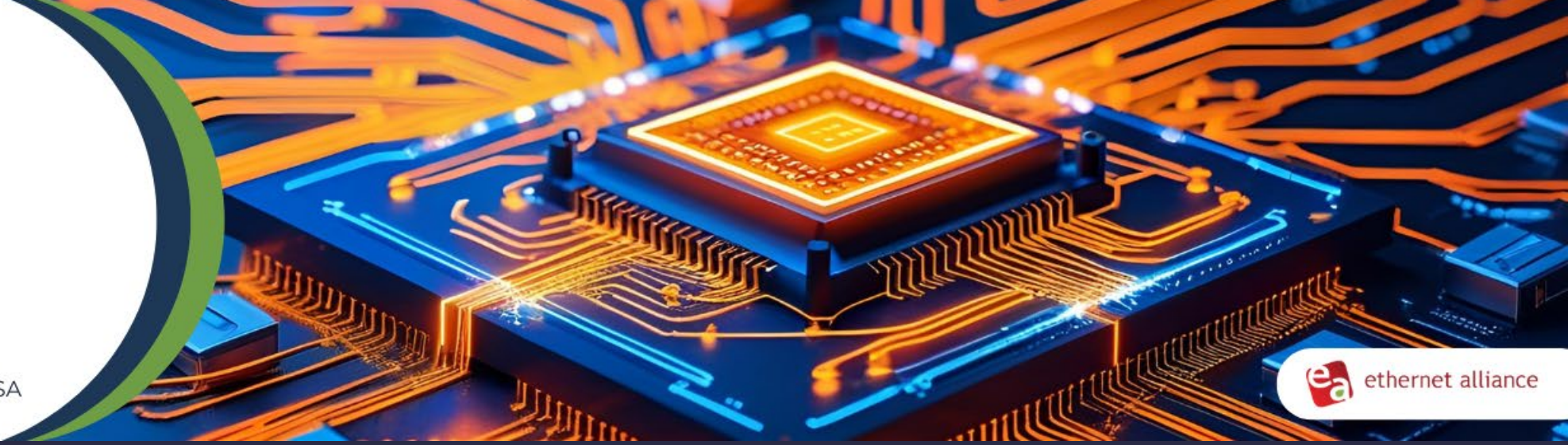


December 2-3, 2025
Hyatt Centric Mountain View, CA, USA



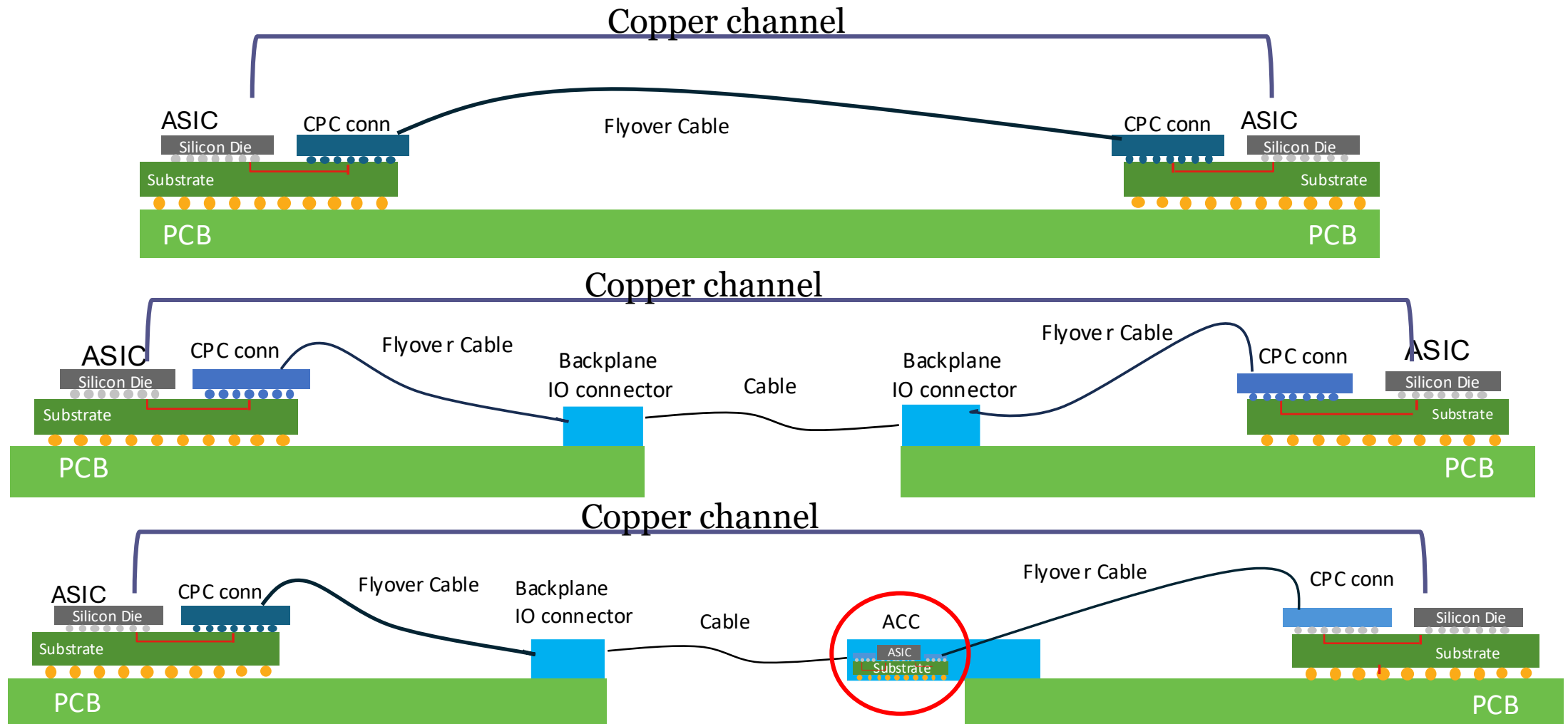
Tom Palkert, Samtec
Chair, SNIA/SFF Transceiver Group
12/03/25



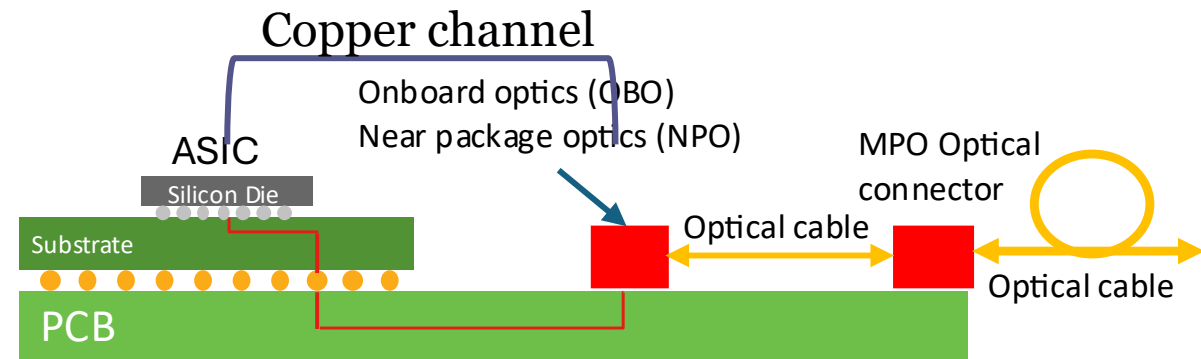
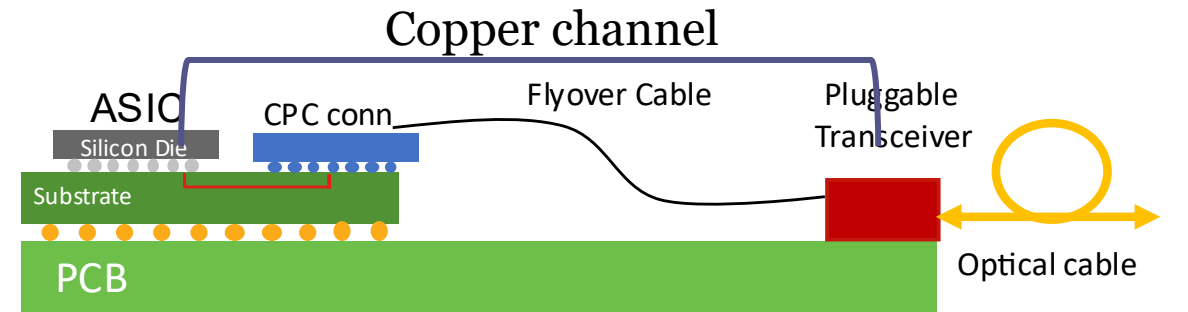
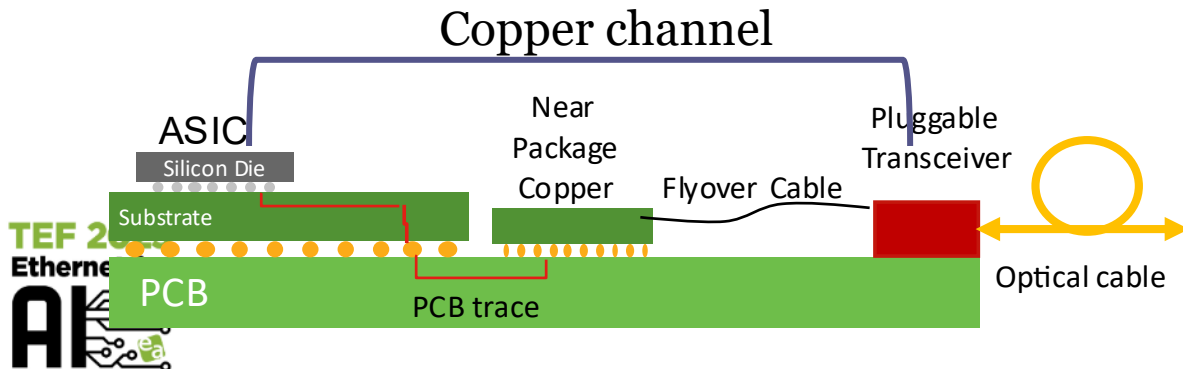
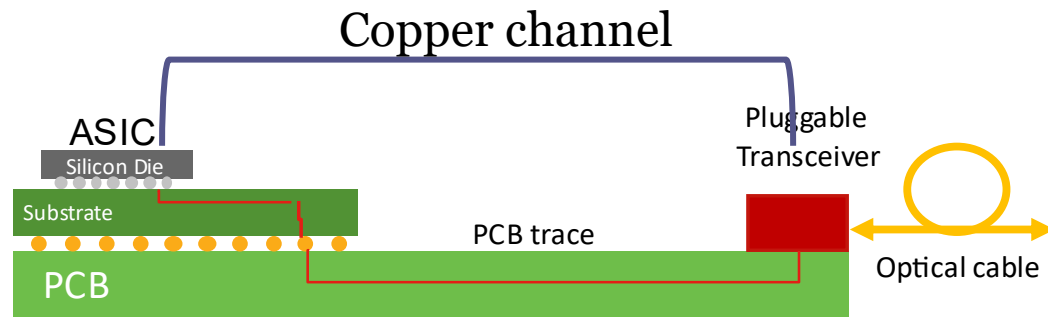
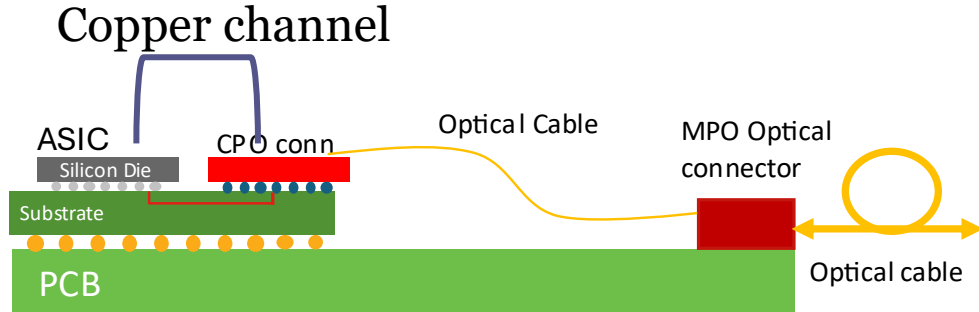
What is needed for AI interconnects?

- Longest Copper reach possible
- Support for DAC, Linear ACC, Retimed AEC, Linear/Retimed AOC
- Support for CPO and CPC
- High density connectors
- High BW connectors
- Link budgets utilizing Host DSP capabilities
 - CTLE, FFE, DFE, MLSE
- Support for Low BER
- Low Latency

Example channels for 448G AI interconnects



More Example channels for 448G (C2M may be done by other standards groups)



SFF project goals

- Define channels (S parameters)
 - C2C with CPC on both ends
 - C2C with NPC on one end CPC on other end
 - 'Backplane' Cable, connectors
 - PCB channels
- Define EM boundaries for channels, packages, connectors
- Refine COM parameters
 - Use 'aggressive' and 'conservative' COM spreadsheets to show impacts of different COM parameters
- Run COM on channels
- Show both PAM4 and PAM6 results (no PAMM8)
- Specify compliance ports for cabled backplane ports?

Additional project scope

- **Storage/compute/backplane focus**
 - Investigate the use of 448G technology to increase the reach of 112G and 224G interconnects
 - Connector Mechanical specifications are out of scope for this project
 - Separate project at later date

Summary of presentations

- Package:
 - Package trace IL provided using ‘current’ advanced materials
 - Ongoing work to define glass core package routing IL
 - New COM models proposed
 - Probe/measurement methods being investigated
- CPC to CPC connections:
 - Channel provided (uploaded to SFF channel folder)
 - Discussions about appropriate EM boundary for channel model
 - Simulations showing excellent performance
 - Additional work to include updated COM parameters
- Flyover cables
 - IL data looks acceptable for some AWG cables
 - IL vs density tradeoffs will have to be made
- Backplane connections/cables
 - Channels requested

COM status

- Proposed spreadsheet uploaded to IEEE Gitlab
 - Decision to develop separate ‘aggressive’ and ‘conservative’ sheets
 - No nominal sheet
 - Connector model still under discussion
 - Further discussions on additional COM parameters on Dec 8 call

QUESTIONS?