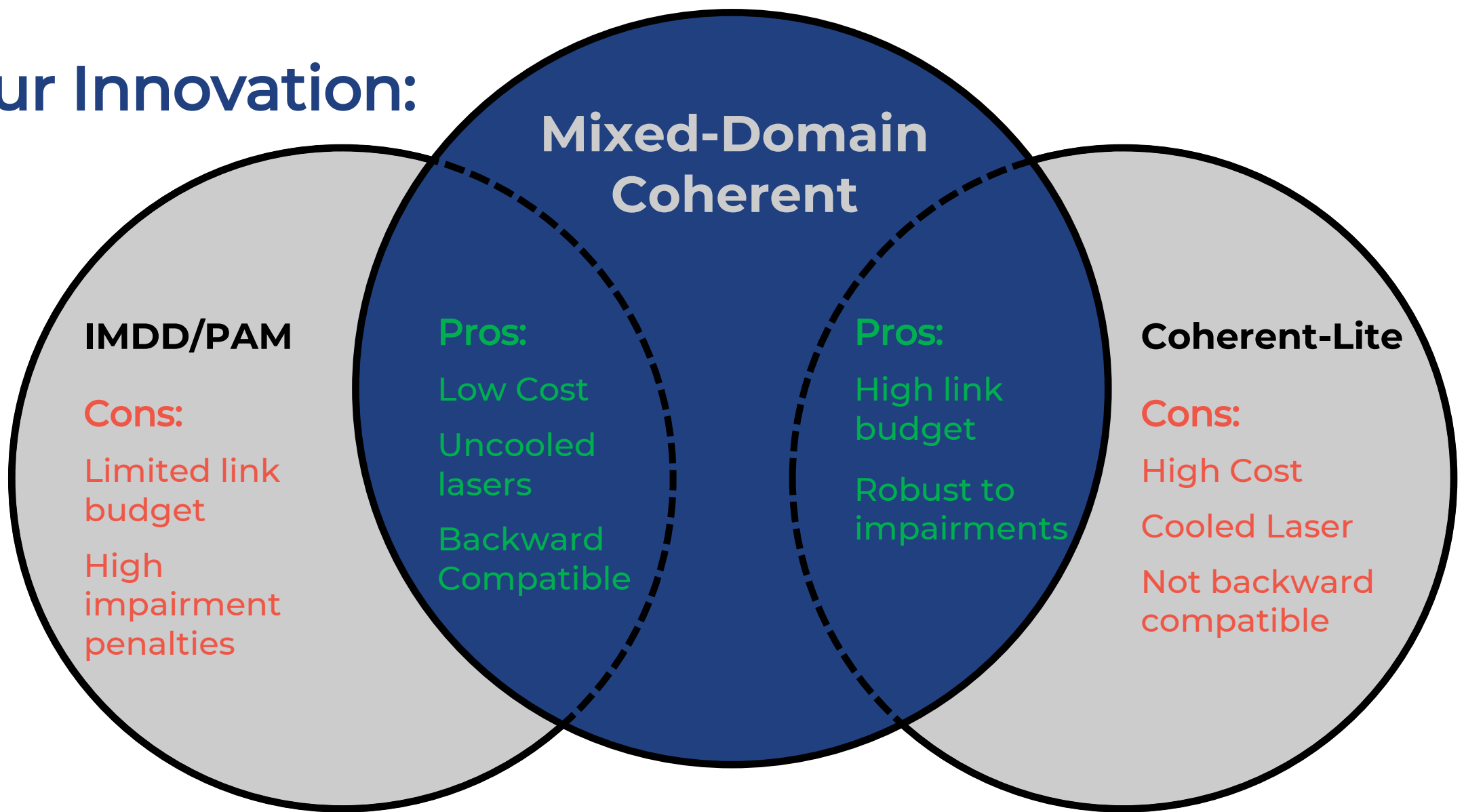




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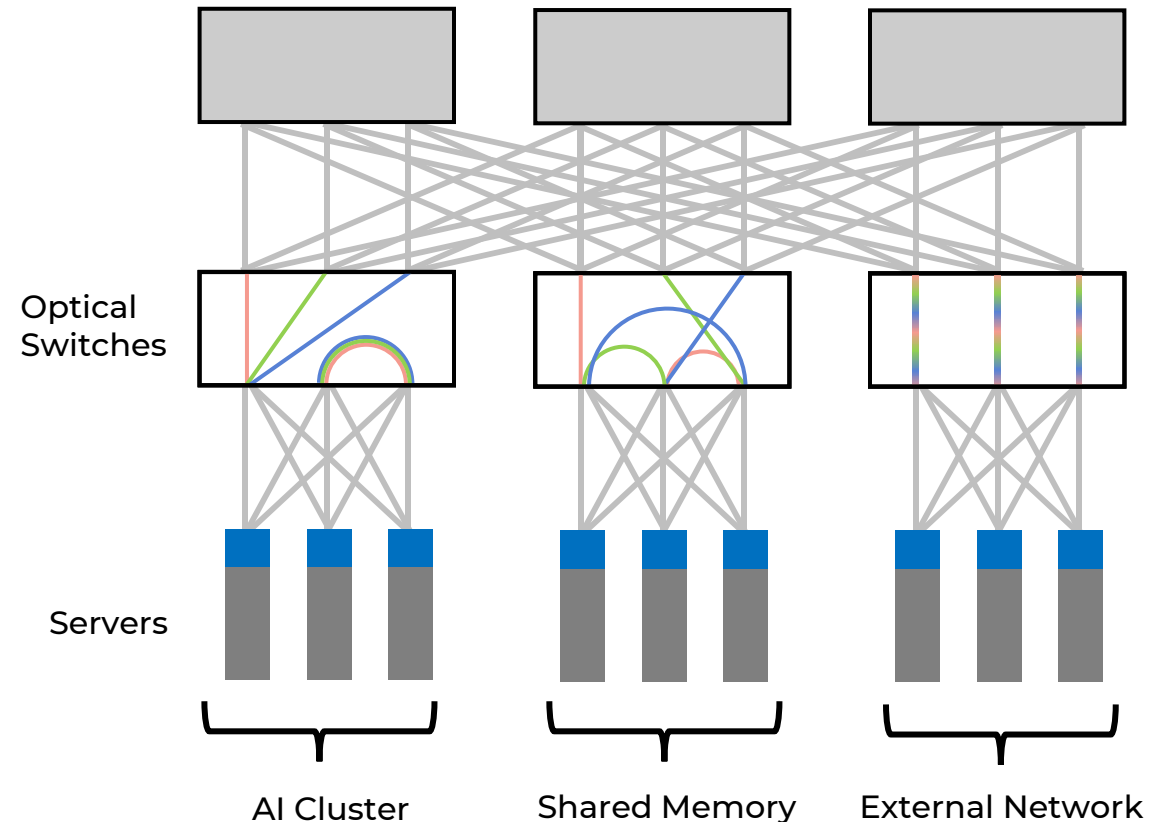
Our Innovation:



Link budget of coherent with the low cost and power of IMDD.

Optical Switching

- Enabling Mixed-Domain Coherent advantages
 - High link budget
 - Low cost
 - Backward compatible
- Benefits reported by Google
 - 41% power savings
 - 30% cost savings
- Further benefits demonstrated at UCSB
 - Low latency important for AI/ML
 - >2X power savings



A. A. M. Saleh et al., "INTREPID program: technology and architecture for next-generation, energy-efficient, hyper-scale data centers [Invited]," JOCN, 2021.

L. Poutievski et al., "Jupiter Evolving: Transforming Google's Datacenter Network via Optical Circuit Switches and Software-Defined Networking," ACM SIGCOMM 2022.

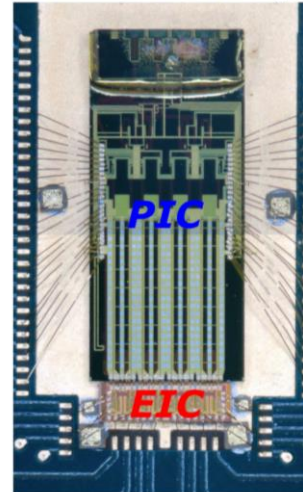
Record-Setting Links Demonstrated, Next-Generation Hardware in Fab

Building on multiple generations of hardware at UCSB (ARPA-E ENLITENED):

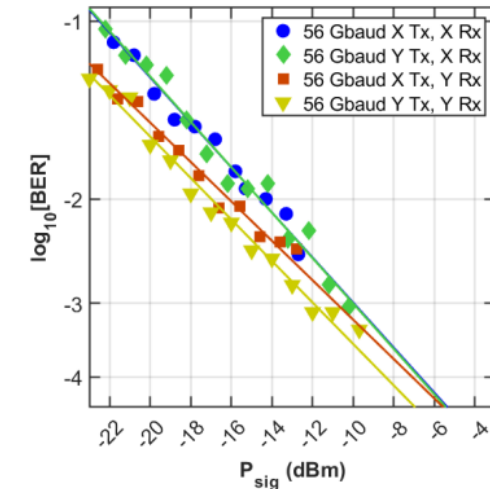
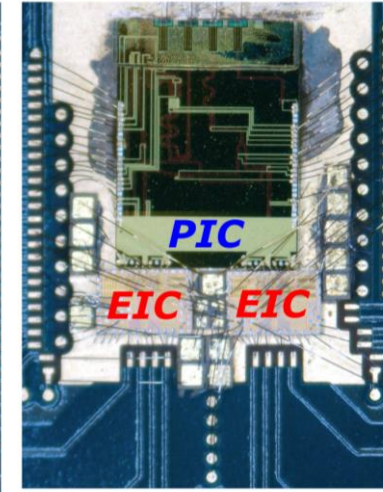
- <1 pJ/bit 50 Gbaud TIA
- First full O-band coherent link
- First full O-band link with >200 Gbps/ λ
- <10 pJ/bit for Tx + Rx PICs and electronics

Lucidean's evolved link hardware in fab

Tx Assembly



Rx Assembly



A. Maharry et al.,

“A 224 Gbps/ λ O-Band Coherent Link for Intra-Data Center Applications,”

OFC 2023, M1E.5

OFC News: [Coherent optical link achieves 200 Gigabits per second single wavelength transmission](#)





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