



Industry Leaders Formally Launch CPO System Architecture Initiative Within the Open Compute Project

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19-company industry coalition publishes 300-page foundational white paper to standardize silicon photonics-ready infrastructure for AI

MOUNTAIN VIEW, Calif. – August 13, 2026 – [Lightmatter](#) today announced the launch of the Open Silicon Photonics for AI Systems initiative as an official workstream within the Open Compute Project (OCP), in collaboration with an expanded coalition that now includes nine new and 10 founding member companies, including Celestica, Dell Technologies, Flex, Foxconn Interconnect Technology, Global Unichip Corporation, Hyve Solutions, Keysight, Lightmatter, Qualcomm, Quanta Cloud Technology and others. The initiative, [first announced earlier this year](#), has published its foundational white paper, “[Architecture Vision: Open Silicon Photonics for AI Systems](#).” This paper will guide the development of a shared CPO blueprint to scale Modular Hardware System (MHS)- and Open Rack v3 (ORv3)-compliant AI clusters from 72 to over 1,024 nodes, while ensuring multi-vendor interoperability and significantly higher compute cluster utilization.

Redefining Rack Economics for the Photonic Era

Data center physics have reached a breaking point. Just as scale-up domains expand across multiple racks, SerDes rates are approaching 448G, shrinking copper’s reach to tens of centimeters and forcing a shift to all-optical fabrics. The OCP reference architecture provides hyperscalers the shared framework needed to make this transition scalable and interoperable across multiple SerDes generations, switch and XPU design cycles. Furthermore, the architecture’s technology-agnostic approach ensures support of diverse photonic solutions, including silicon photonics, VCSELs, and micro-LEDs, fostering a robust, multi-vendor supply chain that can scale to meet the performance and power demands of 100,000-XPU clusters.

“Interconnect has become as fundamental to AI infrastructure performance as compute,” said Nick Harris, Ph.D., Founder and CEO of Lightmatter. “The industry’s shift to silicon photonics will unlock the next major leap in frontier model capabilities. Aligning 19 companies on a system-level architectural vision was an enormous undertaking, and I’m proud of what this coalition has accomplished. This white paper lays the foundation upon which this growing OCP community will develop a shared MHS-based CPO rack architecture that fits into hyperscalers’ build flows. The work begins now.”

“As scaling demands accelerate, optimizing energy efficiency and data transfer speeds across AI systems is now just as critical as raw processing power,” said Jeff Janukowicz, Vice President, Global Lead for Compute Infrastructure and Technologies at IDC. “The physical limitations of copper are increasingly constraining system scalability and accelerator utilization in large-scale AI clusters, and that gap widens with each new generation of AI accelerators. The Open Silicon Photonics for AI Systems initiative establishes a vendor-neutral framework that can accelerate ecosystem collaboration and help move co-packaged optics from early deployments toward mainstream AI

infrastructure.”

The next steps in the formal process include submission of the first specifications, anticipated to take place in Q4 2026.

To learn more or to join this Open Collaboration for CPO-Enabled AI Systems project, please contact ecosystem@lightmatter.co.

About Lightmatter

Lightmatter® is leading a revolution in AI data center infrastructure, enabling the next giant leaps in human progress. The company's groundbreaking Passage® platform—the world's first 3D-stacked silicon photonics engine—and Guide®—the industry's first VLSP™ light engine—connect thousands to millions of processors. Designed to eliminate critical data bottlenecks, Lightmatter's technology delivers unprecedented bandwidth density and energy efficiency for the most advanced AI and high-performance computing workloads, fundamentally redefining the architecture of next-generation AI infrastructure. Visit www.lightmatter.co to learn more.

About the Open Compute Project Foundation

The Open Compute Project (OCP) brings at-scale innovations and hyperscaler best practices to all, spanning technology domains from the data center to the edge, and the technology stack from silicon, to systems, to site facilities and services. The international OCP Community is made up of organizations and people from hyperscale, neocloud and cloud data center operators, communications providers, colocation providers, diverse enterprises, and technology providers. With The OCP Tenets of Openness, Impact, Efficiency, Scale and Sustainability, the OCP Foundation engages with industry ecosystems, our growing membership, and educates thousands of engineers and industry leaders, every year. Across many projects and initiatives, the OCP Foundation and its Community are meeting the AI Data Center market evolution today and shaping the future. Learn more at: www.opencompute.org.

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