

FROM THE INDUSTRY

Harmonic

DRIVES BROADBAND TRANSFORMATION

BY HARMONIC



AS BROADBAND SERVICE PROVIDERS FACE INCREASING PRESSURE TO EXPAND SERVICE AVAILABILITY, MODERNISE THEIR NETWORKS, MANAGE COSTS AND OFFER ADVANCED CONNECTIVITY EXPERIENCE TO SUBSCRIBERS, HARMONIC IS DELIVERING A FUTURE-READY ROADMAP FOR TRANSFORMATION. THROUGH A TRIO OF RECENT MILESTONES — INCLUDING THE LAUNCH OF THE SEASTAR OPTICAL NODE, A STRATEGIC INTEGRATION WITH CUJO AI AND THE SELECTION OF ITS MARKET-LEADING COS VIRTUALISED BROADBAND PLATFORM BY VECTRA — HARMONIC IS RESHAPING BROADBAND INNOVATION WITH SOLUTIONS THAT ARE ALIGNED WITH REAL-WORLD DEPLOYMENT NEEDS.





SEASTAR OPTICAL NODE: FIBRE-GRADE SERVICE WITHOUT REWIRING

Harmonic's SeaStar optical node redefines broadband delivery to lower-density multi-dwelling units (MDUs), one of the industry's most persistent challenges. Brownfield MDUs have traditionally posed logistical and economic barriers due to permitting delays, construction complexity and resident disruption. The SeaStar Optical Node addresses these challenges by converting existing coaxial cabling into a high-performance conduit for high-speed broadband service.

SeaStar supports downstream speeds exceeding 8Gbps and upstream speeds up to 1.5Gbps, using a modular architecture that brings fibre to a centralised location and distributes service via point-to-point fibre to mini-nodes at each MDU. These mini-nodes then connect to the building's coax infrastructure, enabling rapid deployment across up to 16 MDUs from a single SeaStar unit.

The solution eliminates limitations traditionally associated with RF over Glass, including optical beat interference, limited bandwidth and higher latency. Its compact, hardened form factor supports flexible installation indoors or outdoors, on poles, pedestals or building exteriors.

SeaStar is designed with future evolution in mind. Broadband service providers can plug in Harmonic's Fin OLT module or connect to an external OLT to support GPON, XGS-PON or future fibre standards. This fibre-forward approach allows operators to scale capacity as subscriber demand grows, without overhauling infrastructure.

WORLD'S FIRST PTP-LESS DEPLOYMENT AT VECTRA, POLAND

Vectra — one of Poland's largest internet providers — has selected Harmonic's cOS platform to accelerate its multigigabit broadband expansion, enable selective migration to deep fibre infrastructure and power its new wholesale fibre and DOCSIS offerings. This project marks the world's first implementation of Harmonic's PTP-less capability for distributed access architecture (DAA). By eliminating the need for PTP, Vectra avoids the complexity and cost of maintaining a dedicated timing network, simplifying deployment and improving reliability.

Vectra's planned deployment will include Reef Remote PHY shelves along with Oyster DAA nodes and a range of remote OLT devices node, orchestrated through the cOS platform. The architecture is designed to support a selective migration strategy, allowing Vectra to extend fibre deeper into the network where it makes economic sense, while continuing to operate DOCSIS in areas where it remains viable. The cOS platform will also empower Vectra to create new revenue streams with fibre bitstream access and wholesale-over-DOCSIS offerings.

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CUJO AI INTEGRATION: REAL-TIME LOW-LATENCY PERFORMANCE

Harmonic's strategic collaboration with CUJO AI, a leader in network intelligence software, transforms broadband connectivity experiences for latency-sensitive applications such as online gaming, video conferencing and cloud-based collaboration tools. The integrated solution enables real-time detection and end-to-end prioritisation of latency-sensitive traffic by combining Harmonic's support for Low Latency, Low Loss, Scalable throughput (L4S) and CUJO AI's BoostD 3.1 modems. Broadband service providers can activate these capabilities via a simple software upgrade, eliminating the need for major infrastructure investment.

This integration is particularly significant as subscriber expectations shift from speed to quality of experience. By ensuring consistent, low-latency performance for interactive applications, broadband service providers can reduce churn, increase ARPU and differentiate their offerings in competitive markets. The integration also supports non-L4S-compatible applications by intelligently managing traffic flows, ensuring that all latency-sensitive services benefit from enhanced performance.

STRATEGIC IMPLICATIONS FOR THE BROADBAND INDUSTRY

Harmonic's approach to broadband transformation addresses the full spectrum of operator needs — from physical infrastructure and service delivery to network intelligence and monetisation. The company's emphasis on openness and interoperability further enhances its value proposition. Through its Open ONU initiative, Harmonic partners with multiple ONU/ONT technology providers to ensure that broadband service providers can choose the CPE device that best fits their deployment goals, avoiding vendor lock-in and supporting long-term strategic flexibility.

Whether enabling high-speed broadband service in brownfield MDUs, pioneering PTP-less DAA deployment or delivering real-time low-latency experiences, Harmonic is helping broadband service providers meet today's demands and build toward tomorrow's architectures.

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