5G B2B DELIVERY

Managing B2B Live Video Distribution on 5G Networks and Carrier Multi-Access Edge Compute (MEC) Environments

5G USE CASES

- Remote Production Contribution Workflow
- Private 5G Network Untethered Production
- Redundant or Replacement Signal Path for Satellite/Fiber Delivery
- Dynamic and Custom Partner Feed Origination
- Privileged Low Latency Access for Premium Distribution

Compared to traditional delivery over satellite or fiber, 5G technology offers key advantages for B2B distribution of live event and linear channels. 5G networks offer faster connection speeds at significantly lower latency, enabling direct B2B delivery of mezzanine quality live video. Deploying critical video production and distribution services directly within the carrier MEC further reduces the time it takes to create and deliver programming while providing the flexibility to provision and scale distribution as needed. Zixi's 5G B2B delivery fully unlocks cloud-based infrastructures connected to 5G through the Multi-access Edge Compute (MEC) and greater edge-to-edge capacity at very low latency and with multiple methods of redundancy.

Current Challenges Faced by Traditional Live Video Distribution Networks

- Fixed capacity and long lead-time limits video distribution agility
- Inability to customize or localize live video feeds for delivery partners and affiliates
- Satellite can suffer from higher latency and weather related instability
- Significant challenges maintaining visibility and access control once transmitted

Zixi ensures that high value live video assets that traverse from one point over unmanaged and managed networks are clean, optimized and guaranteed quality.

Zixi's 5G B2B Delivery

The Software-Defined Video Platform (SDVP) is a complete solution for provisioning, orchestrating and managing live video on 5G networks. Leveraging the modularity and flexibility of the SDVP, operations teams can quickly and reliably deploy live video routes that maximize the performance of 5G networks.

- **Zixi Protocol** – While 5G networks offer significantly increased bandwidth, they are still subject to fluctuations and anomalies. Zixi's industry leading protocol is the only video transport solution that can dynamically detect and respond to changing network conditions while continuously driving latency out of the distribution.
- **Zixi Edge Compute (ZEC)** – ZEC was built specifically to offer a lightweight yet powerful solution for handling live video at the edge. ZEC instances can be deployed on-prem or directly in the carrier MEC, establishing robust connections over the 5G radio network while providing complete edge-to-edge visibility.
- **Zixi Broadcaster** – Zixi Broadcaster provides advanced ultra-low latency live video processing, GPU-accelerated transcoding and universal interoperability. Supporting the market leading Zixi protocol, as well as 17 other live video transport protocols, Zixi Broadcaster seamlessly conforms live video feeds, matching the unique distribution needs of each delivery target, while providing enhanced QoS as well as perceptual QoE monitoring.
- **ZEN Master** – Provisioning and coordinating resources deployed in the carrier MEC environments and centralizing operational management of the B2B video distributions is ZEN Master, the award-winning live video orchestration and telemetry control plane. This cloud-based interface provides visual and automated tools to configure, orchestrate, manage and monitor live broadcast channels at scale across industry protocols.

Zixi Maximizes 5G Performance and Enhances Delivery Reliability

5G networks offer the bandwidth and latency performance needed to deliver mezzanine quality live video. Zixi's 5G B2B delivery provides enhanced reliability and security while continuously optimizing video throughput and providing continuous edge-to-edge delivery monitoring. Zixi enables bonding diverse signal paths, including across other 5G, 4G/LTE, fixed Internet and LEO Satellite connections to ensure uninterrupted delivery. Advanced features include:

Transmission Features

- ARQ: Efficient re-transmission and congestion avoidance
- FEC: Forward Error Correction is enabled to each multicast client
- Diverse Network Path Bonding
- Sequenced Hitless Failover
- DTLS Connection Security and AES Content Encryption
- Dynamic Adaptive Bit Rate Control
- Dynamic Continuously Optimized Adjustable Latency
- PID Selection, Re-Mapping and Normalization
- Low Latency Live GPU-Accelerated Transcoding and Stream Packaging
- Enhanced QoS across private networks including lower quality circuits
- MEC and Cloud Orchestration with automated resource provisioning in AWS Wavelength Zones

Telemetry Features

- Centrally manage multi-cloud, multi-network workflows internally and between partners
- Ability to orchestrate, monitor and report stream attributes across segments and traverse managed and unmanaged IP networks with unified control plane
- Trace route visibility on signal paths
- TR101 analysis
- Network Analytics
- Content Quality and Business Impact Analytics
- AI based Quality Scoring: eVMAF and ePSNR

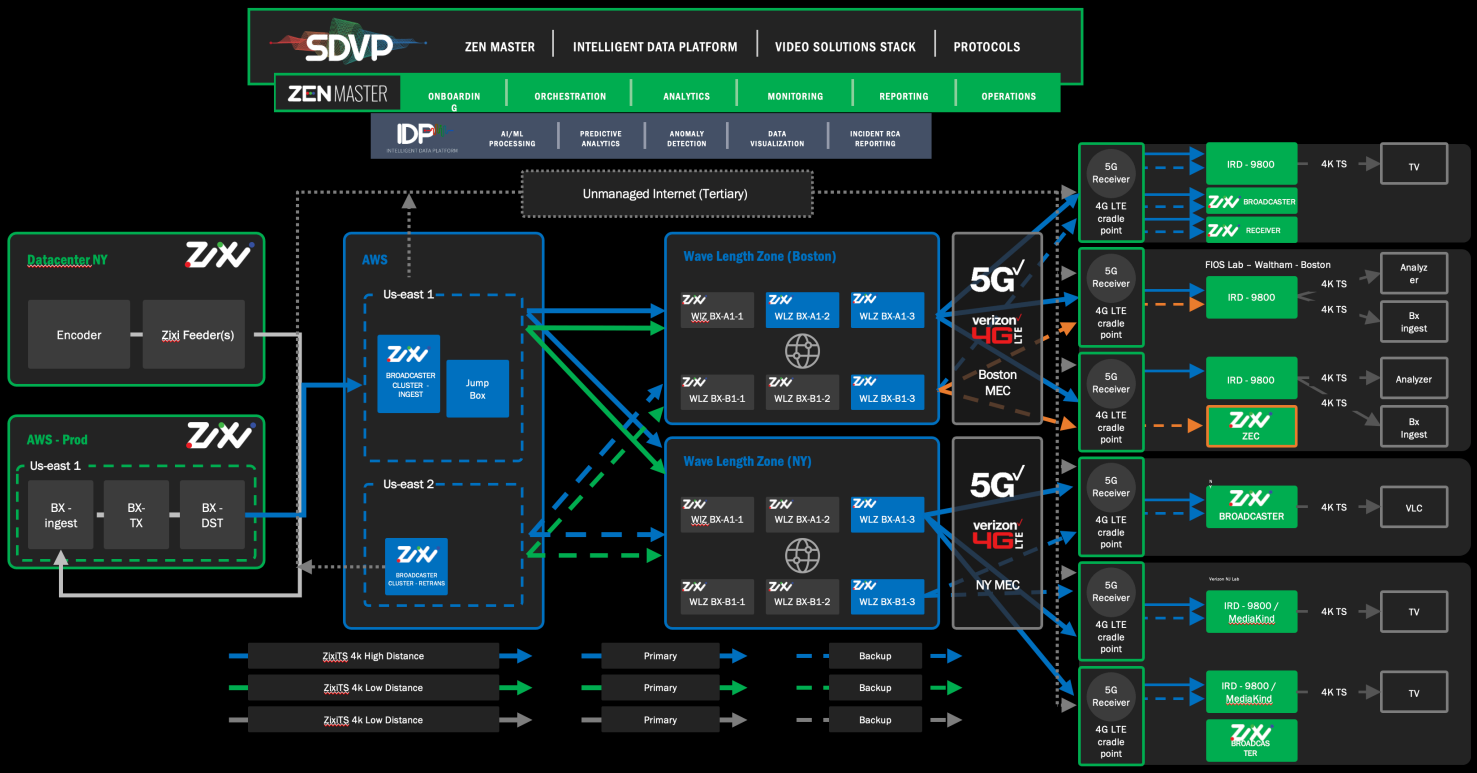
Zixi SDVP Benefits

- **Orchestration** – Architect and securely deploy workflows across diverse cloud platforms, global regions and private networks
- **Telemetry** – Extend visibility to endpoints downstream with Zixi protected multicast
- **Interoperability** – 17+ protocols, 400+ integrated partners, open standard transmission options
- **Scalability** – The Zixi Broadcaster software is multi-threaded, so high throughput can be achieved 6Gb+
- **Security** – DTLS, AES, SSO and password protected
- **Virtualization** – Bridge remote media facilities to maximize value of diversely deployed resources and tools
- **Zixi Sequential Hitless Failover** – Zixi patented hitless failover is extension and improvement of SMPTE 2022-7 with industry leading packet sequence alignment algorithm
- **Bonding** – Zixi dynamically and intelligently manages fluctuating bandwidth, packet loss, and latency differences of individual connections in real-time, to choose the optimal path to route IP packets
- **Low Latency** – Zixi manages latency as an adjustable parameter and assigns latency budgets to achieve desired QoS

SDVP Quantifiable Returns

- **Root Cause Analysis** – Root Cause Analysis is provided in minutes not weeks, with the ability to isolate and identify problems in the supply chain effectively, across teams
- **Network Bandwidth Optimizations** – Reduce infrastructure utilization, streamline hardware footprints, and reduce unnecessary traffic
- **Scalability with Agility** – Easy to onboard, reduce time of deployment, increase reach of resources
- **Virtualized Collaboration** – Manage and control services across the supply chain of resources and global teams
- **Democratize Operational Resources** – Leverage operational resources and maximize specialized engineering skill sets
- **Achieve Business SLAs and Uptime** – Highest availability, optimal recovery time, manage maintenance downtimes
- **Delivery of Highest Quality of Experiences** – Deliver highest possible Quality of Experience across programming and advertising

Example Zixi 5G B2B Delivery Production Deployment



ABOUT ZIXI

Zixi provides a cloud based and on-premise Software-Defined Video Platform enabling the management, orchestration, monitoring, and delivery of broadcast-quality live and live linear video over any IP network, protocol, cloud provider or edge devices to broadcasters, enterprises, over-the-top video providers, and mobile service providers around the world. Over 15+ years, the Zixi Enabled Network (ZEN) of partners has grown to over 400+ OEM and service providers with whom Zixi serves well over 700+ customers representing most of the top media brands around the world with 20,000+ channels delivered daily. www.zixi.com | sales@zixi.com