

# Lockwood Broadcast Group Case Study

Reliable Video Delivery over IP  
Streamline Operational Efficiency

## Lockwood Broadcast Group Streamlines Operational Efficiency with VideoFlow's All-in-One Solution for Video Delivery over IP

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*"VideoFlow's all-in-one solution for video delivery over IP has helped us optimize our operational efficiency while reducing our hardware footprint."*

Mr. Bob Pectelidis  
Corporate Director of  
Engineering,  
Lockwood Broadcast Group

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### The Challenge: Efficient and Reliable Video Delivery over IP

Lockwood Broadcast Group has been on the cutting edge of video delivery over IP since its inception. It has been involved in IP multicasting since 2007 and was among the first broadcasting companies to distribute HD content over IP.

Before using VideoFlow, Lockwood had worked with several vendors for video transport with various levels of success. "We looked at everything out there, tried numerous products but couldn't find anything that gave us both the reliability and the operational efficiency that we need," said Bob Pectelidis, Lockwood's Corporate Director of Engineering.

One of Lockwood's key challenges was finding an effective way to reduce bitrate overhead. This was a critical cost factor since the company's transport infrastructure to the TV stations has been and is still primarily based on dedicated private lines (e.g., bonded T1, leased lines) that carry a significant price tag.

Before using VideoFlow, Lockwood deployed compact and reliable MPEG4 devices that used forward error correction (FEC) for recovering lost packets. The bit rate overhead when using FEC can reach a constant 29% even if no packet is lost and, if a guard band is added, overhead can reach 49%. "We had to allow for a fair amount of overhead regardless of the line quality, just in case," confirmed Pectelidis. "We needed a more efficient way to deal with packet loss to save money and network resources."

### VideoFlow's All-in-One Digital Video Protection (DVP) Solution

To address these challenges, Lockwood sought a simple, reliable, and efficient "all in one" solution for its content contribution and distribution over IP.

Following a thorough evaluation, Pectelidis and his team found VideoFlow DVP to be much more efficient in terms of overhead than other solutions. VideoFlow's Emmy® award-winning technology uses ARQ rather than FEC to achieve the lowest bitrate overhead and delay on the market. In addition, DVP uses UDP/RTP, which – unlike TCP – maintains a high bit rate regardless of the delay and packet loss ratio while using ARQ to recover the lost packets. "UDP is perfect for optimizing bandwidth utilization," said Pectelidis. "We don't want our 100 Mbps connection to turn into a 10 Mbps connection due to overhead."

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In addition, Lockwood was looking for a future-proof solution that adhered to an open, standard-based architecture, such as RIST, that would give it the flexibility to work with multiple vendors as needed. "When we started to look at RIST, we saw that VideoFlow's packet recovery technology is being used by all vendors implementing RIST," said Pectelidis. "What's more, we learned that RIST is just a subset of what VideoFlow does and that many future advanced features planned for RIST are already supported by VideoFlow DVP today."

### **Helping Lockwood To Broadcast With CONFIDENCE**

The VideoFlow DVP solution has been operating 24x7 on Lockwood's primary connections since January 2019. Comprising two DVPs at the NOC in active/standby mode for high availability and two DVPs at each affiliate site, the VideoFlow solution enables reliable content distribution and contribution over IP networks. It distributes content from the Lockwood NOC to five affiliate stations over dedicated IP links and receives content (news, etc.) from three other stations over the internet.

Lockwood can respond faster to any issue using DVP's built-in Confidence Monitoring capabilities, which enable personnel at the NOC to verify the quality of the live stream being received at each remote affiliate site. This return feed leverages the DVP in the affiliate's site to monitor the ETR-290 data to determine if there are any transport stream anomalies like PCR inaccuracies or PSIP errors as well as feeding the live monitor signal to Lockwood's multi-viewer at the master control.

From an operational standpoint, Lockwood has also benefited from VideoFlow's professional technical support. "VideoFlow has been very sensitive to our service continuity needs," said Pectelidis. "We had some issues early on related to interpretations of the RIST protocol - we reported the issues to their technical team and got a fix without us missing a beat."

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## Results and Benefits

Using VideoFlow's DVP, Lockwood has achieved concrete operational and business benefits:

- **Reduced monthly expenditure** – Lower bitrate overhead for packet recovery enhances network efficiency, thus lowering monthly communication costs.
- **High availability** – "Five-nines" (99.999%) reliability with redundant active/standby DVPs in NOC.
- **More than RIST** – Using DVP's future-planned RIST features today gives Lockwood a competitive edge.
- **Maintenance-friendly** – All-in-one solution reduces Lockwood's hardware footprint, while the confidence return feed alleviates maintenance headaches.
- **QoE and QoS monitoring** – ETR290 monitor detects stream errors in real-time, while network statistics help Lockwood fine-tune settings.

## About Lockwood Broadcast Group

Lockwood Broadcast Group owns nine television stations in several markets across the US. Its main offices are in Hampton, Virginia with Operation Headquarters in Richmond, Virginia. Lockwood was among the first broadcast companies to deliver HD broadcasts over IP networks and utilizes advanced IP-centric, multi-protocol label switching (MPLS)-based solutions across its private IP cloud.