



USER STORY

**100% Radio Embraces Full Virtualization
with WorldCast Systems**

OVERVIEW

100% Radio, a vibrant French network known for its contemporary hits and regional content, operates 16 distinct program feeds across 50 FM frequencies and DAB+ across a number of large cities. As the station grew, it faced mounting challenges around scalability, reliability, and operational efficiency. To maintain its competitive edge and deliver consistent, high-quality audio, 100% Radio needed to modernize its broadcasting infrastructure without increasing complexity.

To harmonize audio transport across sites and in partnership with WorldCast Systems, the station adopted a virtualized MPX over IP transport – from the studio to the transmitter sites, enhancing performance, streamlining operations, and ensuring resilience for the future.

CHALLENGE - Scaling Without Complexity

Expanding the number of programs and frequencies made it increasingly difficult to manage audio processing and distribution with traditional, hardware-heavy methods. Each program typically required dedicated audio processors at multiple locations, multiplying equipment, maintenance, and failure points. This setup posed significant hurdles: higher costs, limited flexibility, and a growing risk of service disruption. Most importantly, it became harder to guarantee consistent audio quality across all transmission sites. 100% Radio needed a more agile and centralized approach - one that could scale effortlessly while simplifying operations.

SOLUTION - Virtualized Infrastructure and Intelligent MPX over IP Transport

To meet these needs, 100% Radio adopted a software-defined architecture powered by WorldCast Systems' virtualized APT IP Codecs and APTmpX technology.

Audio processing for each program is handled in the studio using Omnia.9s software processors, whose MPX outputs are routed directly to the Virtual APT IP Codec running in containers. This eliminates the need for physical codecs at the studio and allows fast deployment of new program streams to feed their FM network.

The Virtual APT IP Codecs perform MPX compression and transport using APTmpX, a low-bitrate, high-fidelity algorithm available in three formats: 300, 400, or 600 kbps. This approach ensures sound integrity while significantly reducing bandwidth usage and avoiding reprocessing at each site.



SOLUTION (Continued)

At transmitter sites, 100% Radio uses several types of transmitters. When using older or non-WorldCast FM transmitters, the MPX over IP stream is decoded by an APT Silver Decoder (MPX version) with a BNC output to feed the existing transmitter via analog MPX. This architecture is both cost-effective and backward-compatible.

When using the new Ecreso FM AiO Series, the APT IP decoder is already built in as software. In other words, the APT stream is directly decoded and modulated to FM by the direct-to-channel digital modulator. In this case, the transport is fully virtualized and remains digital all the way to the RF stage, thus increasing both reliability and quality.

100% Radio has already transitioned many sites to the new AiO Series and plans to continue gradually. Some IP links exhibited packet loss, which was effectively mitigated by enabling APT SureStream's built-in redundancy. Even with a single IP path, reliability improved significantly, with packet loss reduced to almost none. Another key advantage lies in the inherent resilience of the APTmpX algorithm. Thanks to its non-framed design, any packet loss has little to no perceptible impact on the audio, unlike many other solutions. The entire system is supervised through Kybio, WorldCast's vendor-agnostic network monitoring platform. With centralized supervision, the technical team gains full visibility and control over the infrastructure, allowing proactive issue detection and streamlined operations.



100% Radio studio.

SOFTWARE Sound Processors



Representation of 100% Radio's new generation infrastructure using Virtual APT IP Codec with APTmpX at the studio, and two applications deployed at transmitter sites.

RESULTS - Efficient, Scalable, and Resilient Broadcasting

The shift to a virtualized broadcast chain delivered powerful benefits across technical, operational, and financial dimensions. Operations became more flexible and scalable, allowing new programs to be added with ease. By reducing the hardware footprint, the station also cut energy usage, rack space requirements, and maintenance costs.

An important factor in the decision to adopt APTmpX and the Virtual APT IP Codec was their exceptionally low CPU usage — up to three to four times lower than competing solutions. This efficiency translates into significant infrastructure savings, as it reduces the need for high-performance servers and allows more channels to be processed on the same hardware.

CONCLUSION - A Model for Modern Radio Operations

100% Radio's transformation is a compelling example of how virtualization and intelligent IP transport can revolutionize FM broadcasting. By working with WorldCast Systems, the station simplified its infrastructure, boosted reliability, and future-proofed its operations—without sacrificing audio quality or flexibility.

This forward-thinking approach positions 100% Radio as a leader in modern radio delivery, and a model for broadcasters looking to evolve in a competitive and fast-changing media landscape.

KEY BENEFITS

- Lower operating costs through reduced hardware, energy use, and maintenance
- Low bandwidth usage and reliable transport across the entire network.
- Consistent sound quality through centralized MPX processing
- Full control with real-time supervision via Kybio
- Faster scalability as new program feeds are deployed virtually

