Success Story

WNET Delivers Superior Quality Video and Experience with Interra Systems' ORION™ Real-time Monitor

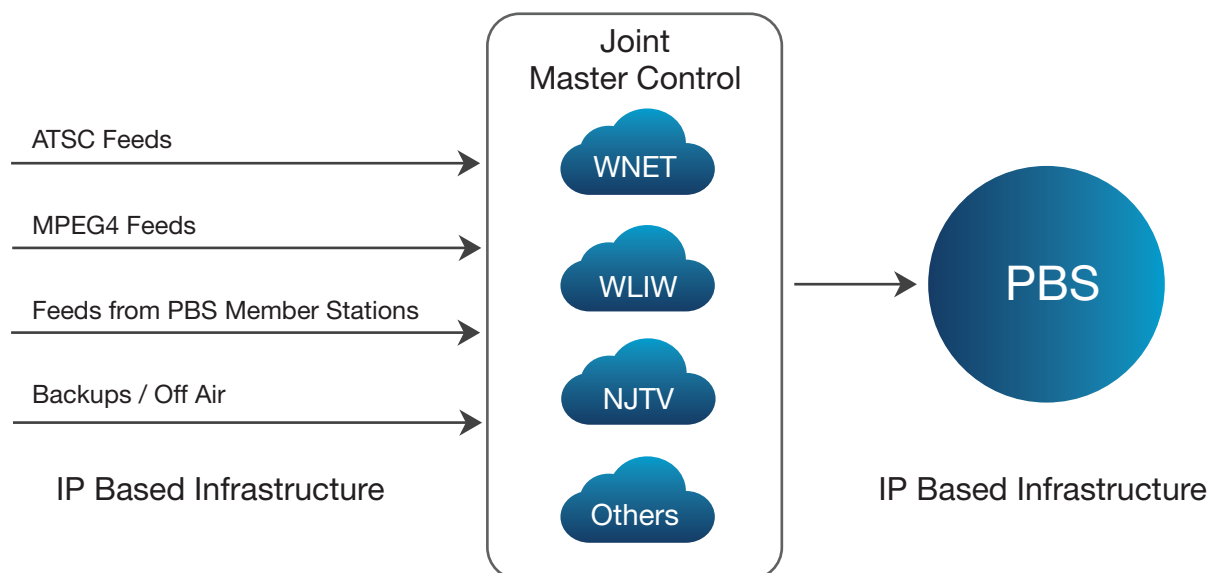**WNET** NEW YORK PUBLIC MEDIA. **THIRTEEN**

ORION™

Background

As New York's flagship public media provider and the parent company of THIRTEEN and WLIW21 and operator of NJTV, WNET brings quality arts, education and public affairs programming to over 5 million viewers each week. WNET produces and presents such acclaimed PBS series as Nature, Great Performances, American Masters, PBS NewsHour Weekend, Charlie Rose and a range of documentaries, children's programs, and local news and cultural offerings available on air and online. Pioneers in educational programming, WNET has created such groundbreaking series as Get the Math, Oh Noah! and Cyberchase and provides tools for educators that bring compelling content to life in the classroom and at home.

Challenges

The Thirteen/WNET group of stations, WNET, WLIW, and NJTV, went live with the Joint Master Control, CentralCast LLC., in Syracuse in July of 2014. At that time WNET needed a monitoring solution for the IP streams they were receiving over their New York State GigE Network and distributing for air. They currently receive three main ATSC IP streams, as well as an MPEG4 stream that they feed to PBS. They also receive studio to studio links from the other New York State PBS member stations, as well as backups and off-air monitoring. All of these are now IP streams that they had no monitoring solution for.
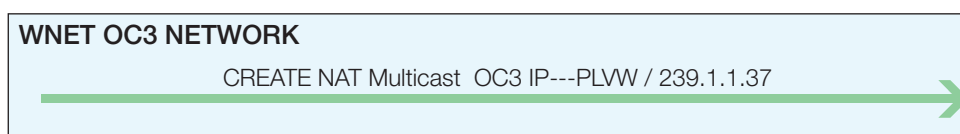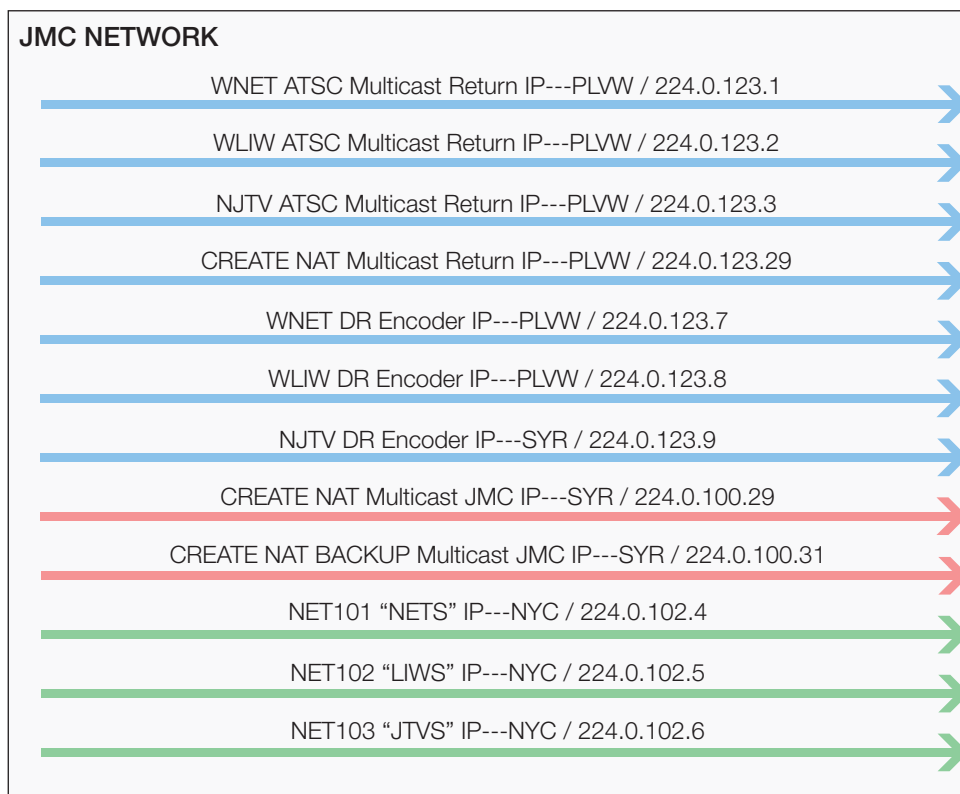

ATSC Feeds

MPEG4 Feeds

Feeds from PBS Member Stations

Backups / Off Air

IP Based Infrastructure

Joint Master Control

WNET

WLIW

NJTV

Others

PBS

IP Based Infrastructure

The Solution and Benefits

WNET was familiar with Interra Systems through its use of **BATON®** automated file-based QC solution. After doing a comprehensive evaluation of **ORION™** real-time content monitor, they were very impressed with the product, its feature set, and accuracy of monitoring status. Their ORION server runs on a Windows server with the required network hardware for IP capture. ORION is currently monitoring streams that are compressed using different MPEG standards such as H.264, MPEG-2, MPEG-2 Transport Streams, Closed Captions etc. The ORION system has been working without any problems, handling the traffic and memory. The CPU usage is monitored continuously by ORION to alert the operators in case any proactive actions are required.

ORION gives WNET the ability to monitor streams on two distinctly different networks. WNET monitors its CentralCast traffic on one network and delivery of the Create National stream to PBS on another OC3 datalink.
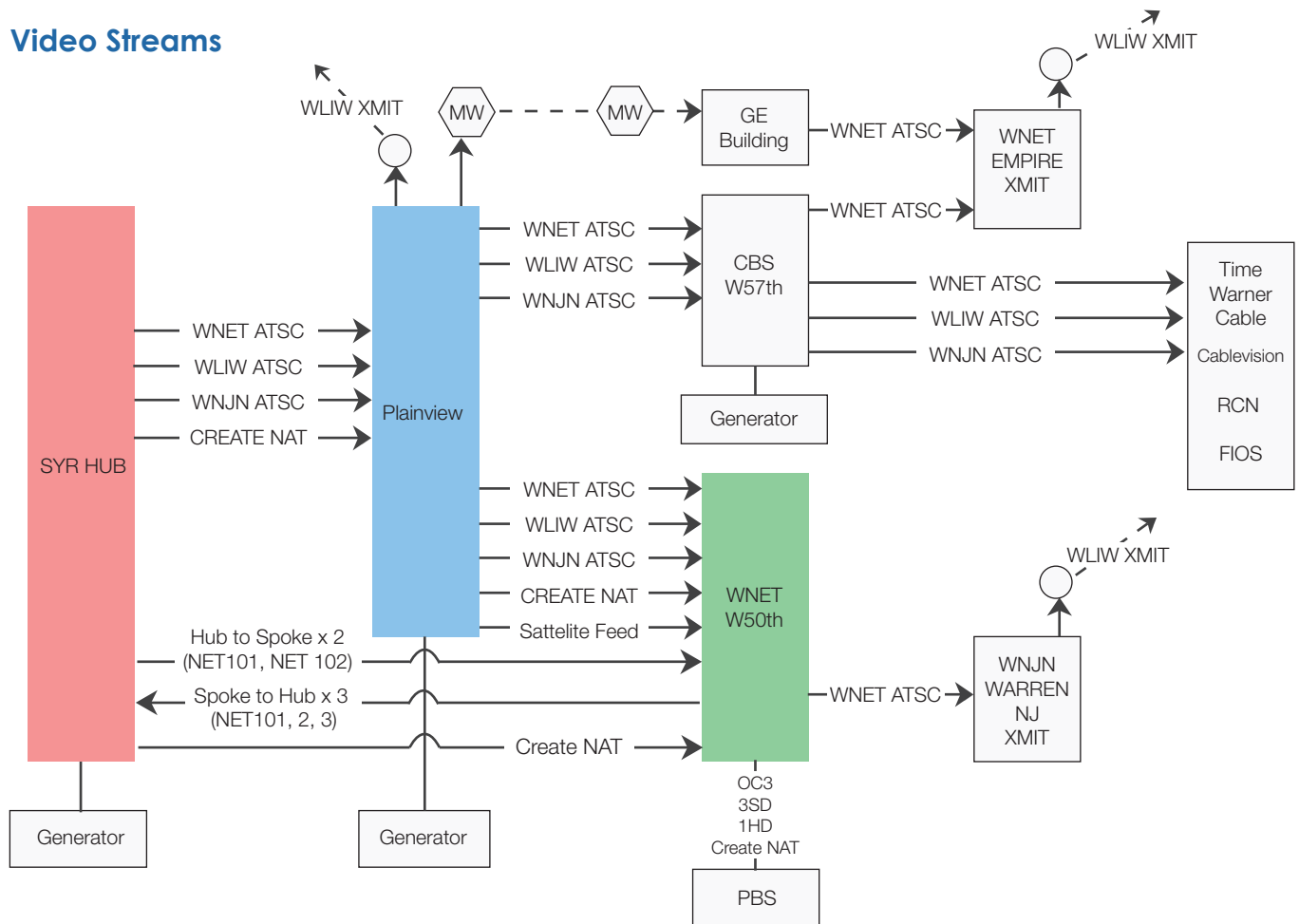
The three main ATSC streams are delivered to their distribution point in Plainview, Long Island, where the receiver cards generate a multicast return signal. They monitor the arrival of these three main ATSC streams with the ORION server in NYC. WNET also monitors spoke to spoke or studio return feeds generated in NY for live feeds to the CentralCast hub. Monitoring with ORION is also in place for their three disaster recovery (DR) ATSC encoders in Plainview, which act as the on-air signal in the event of circuit failure. Finally, at times, for troubleshooting reasons, they pick up a multicast stream from another station's studio return, for monitoring. All of this, including file transfers, is delivered over their NYS Network GigE connection. ORION's flexible licensing allows them to expand monitoring and can be built out with separate database and multiple nodes as a fully scalable solution, if necessary.

JMC NETWORK

WNET ATSC Multicast Return IP---PLVW / 224.0.123.1

WLIW ATSC Multicast Return IP---PLVW / 224.0.123.2

NJTV ATSC Multicast Return IP---PLVW / 224.0.123.3

CREATE NAT Multicast Return IP---PLVW / 224.0.123.29

WNET DR Encoder IP---PLVW / 224.0.123.7

WLIW DR Encoder IP---PLVW / 224.0.123.8

NJTV DR Encoder IP---SYR / 224.0.123.9

CREATE NAT Multicast JMC IP---SYR / 224.0.100.29

CREATE NAT BACKUP Multicast JMC IP---SYR / 224.0.100.31

NET101 "NETS" IP---NYC / 224.0.102.4

NET102 "LIWS" IP---NYC / 224.0.102.5

NET103 "JTVS" IP---NYC / 224.0.102.6

ORION
NYC

WNET OC3 NETWORK

CREATE NAT Multicast OC3 IP---PLVW / 239.1.1.37

Signals from Plainview, Long Island
Signals from Syracuse
Locally Generated Signals

Video Streams

WLIW XMIT

WLIW XMIT

MW — — MW

GE Building

WNET ATSC

WNET EMPIRE XMIT

WNET ATSC

SYR HUB

WNET ATSC
WLIW ATSC
WNJN ATSC
CREATE NAT

Plainview

WNET ATSC
WLIW ATSC
WNJN ATSC

CBS W57th

WNET ATSC
WLIW ATSC
WNJN ATSC

Time Warner Cable

Cablevision

RCN

FIOS

Generator

WNET ATSC
WLIW ATSC
WNJN ATSC
CREATE NAT
Sattelite Feed

WNET W50th

Hub to Spoke x 2 (NET101, NET 102)

Spoke to Hub x 3 (NET101, 2, 3)

Create NAT

WNET ATSC

WLIW XMIT

WNJN WARREN NJ XMIT

Generator

Generator

OC3
3SD
1HD
Create NAT

PBS

ORION monitors many facets of their streams beginning with the basics, the transport stream, and continuing all the way to the service particulars including video decoding, video levels, blockiness, audio loudness monitoring, closed caption compliance, black, static, or silence on-air, etc. This is all customizable to the preference of monitoring depth.

WNET has benefitted greatly with ORION - dashboard and the reporting features are relied upon heavily and provide accurate system status and troubleshooting platform. The dashboard is a customizable home page of stream monitoring using dashlets that you decide based on your preference. The dashboard provides, at a glance, the overall health of the streams. It also provides thumbnails of each service, most erroneous feed, most erroneous service, and most common alerts dashlets. The reporting is completely customizable and is something they use to provide a daily report of all of the product deliveries. Any issues that crop up, are easily documented and provided in a comprehensive reporting form. In their search for an IP or ASI monitoring solution, they were unable to find any product that equaled ORION in reporting function.

Customer Speak

"At WNET, we needed a reliable, 24x7 content monitor that helped us deliver programming at higher quality with greater efficiency. As a monitoring platform, we found ORION to be very powerful yet easy to use. It helps us proactively monitor all channels for any errors at network, transport stream and embedded data levels. ORION has been especially useful in addressing some of the PSIP and Closed Caption related issues we were facing. ORION has worked out very well for us and we are very impressed by its quality and performance," said Peter Brickman, CTO at WNET. "Also very important to us is the great support that we receive from Interra Systems on ORION. We can go on to talk about the prompt responses, attention to feature requests, white papers, etc. that we get from support at Interra Systems. We are very happy with ORION and its capabilities and are always happy to work with Interra Systems to further the product".