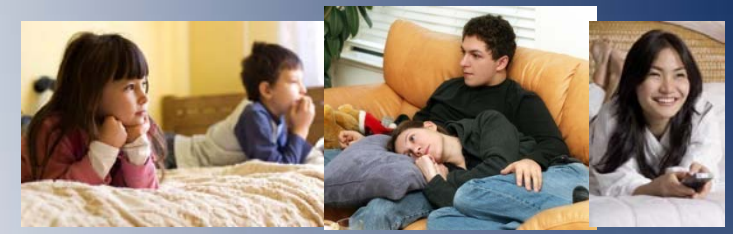


VideoClarity

Tools for Video Analysis

Company

Video Clarity
Tools for Video Analysis

- A Silicon Valley based group of video experts
- Started in 2003, first product shipped in 2004
- Added Objective Metrics starting in 2008
- Introduced Monitoring products in 2009
- Customers are industry leaders

Customers
(partial list)

Video Clarity
Tools for Video Analysis

Product RTM

Video Clarity
Tools for Video Analysis

- Real-time, full-reference monitoring
  - Measures audio & video quality
  - Measures VANC
  - Checks A/V Sync

- Reports the quality scores and alerts on problems

- Saves sequences on detected problems

RTM – Applications

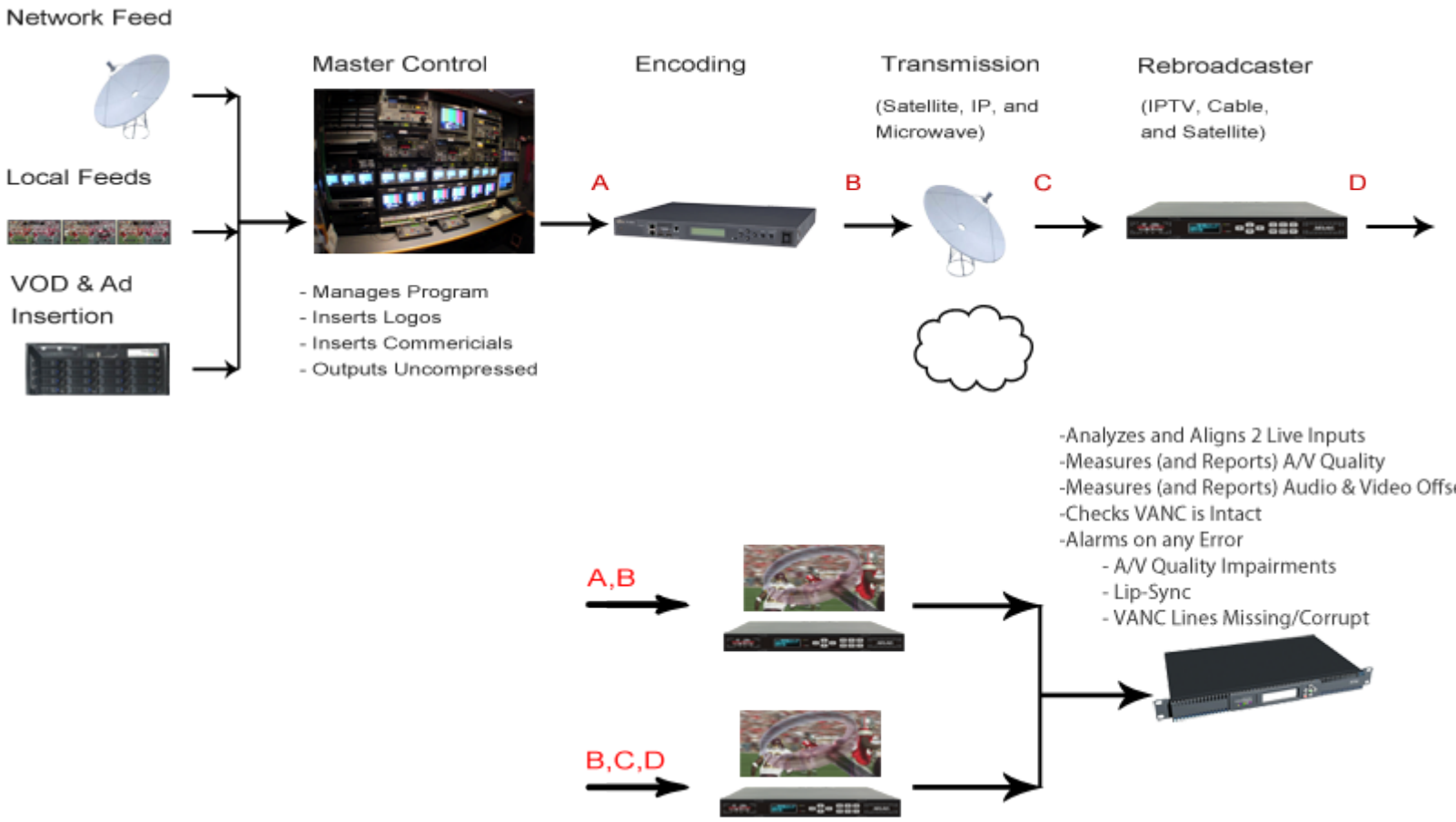
Video Clarity
Tools for Video Analysis

- Long duration testing
  - Continuously aligns the audio and video
  - Saves the sequences only when an error is detected
  - Reports the quality scores
  - Reports alignment, drops in audio/video quality

- Finds in-plant transmission, quality issues
  - Can be used to check the quality at different points throughout the network.

RTM – Broadcast Network Testing

Video Clarity
Tools for Video Analysis



✓Monitor A/V quality degradation from point A or B to B, C, or D
✓Compare same broadcast transmissions from different providers

RTM Graphical Interface

Video Clarity
Tools for Video Analysis

- 0 A/V Quality Problems
- 0 VANC or Lip-Sync Issues
- Run Time 1hour 20minutes

- Video Offset 174 frames
- Audio Offset 29.7ms relative to Video (audio is ahead by 29.7ms)
- Spatial Offset is X=2

Product ClearView

Video Clarity
Tools for Video Analysis

- Audio & Video Server, Recorder, File Importer
  - HDMI, SDI-3G, HD-SDI, Component, Composite I/O
  - DVI output
  - Uncompressed/Compressed file converter
  - Support RGB or YUV Uncompressed data
- Objective Full Reference Quality Checker
  - Automatic Audio/Video Alignment
  - DMOS
  - JND (PQR)
- Viewer
  - Multiple Viewing Modes

ClearView – Product Matrix

Video Clarity
Tools for Video Analysis

ClearView Shuttle

Portable cube shaped unit, high storage, plays DVI up to 60Hz or has 1 broadcast I/O for record and playout up to 1080i

ClearView Extreme

3RU, high storage, plays DVI up to 120Hz or has 2 broadcast I/O for dual record, dual playout, playout and record up to 1080P

ClearView QA

Small 1 RU form factor, records, aligns and compares using PSNR for pass/fail testing.

ClearView– Applications

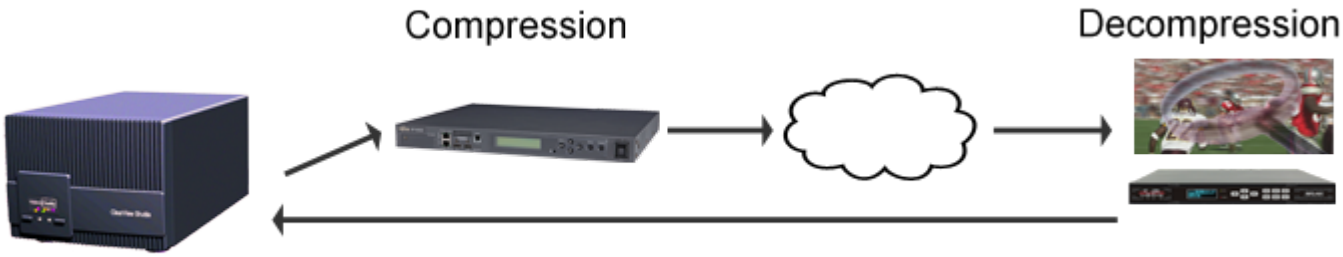
Video Clarity
Tools for Video Analysis

- Video Server/Recorder
  - Synchronized dual output video server (3-D, stereoscopic)
  - Play to Encoder (processing units) Record their output (play & record)
  - Record 2 inputs

- In depth A/V analysis
  - Align Audio & Video
  - Calculate JND, DMOS, and PSNR scores
  - View Images in multiple viewing modes

ClearView – Encoder Testing

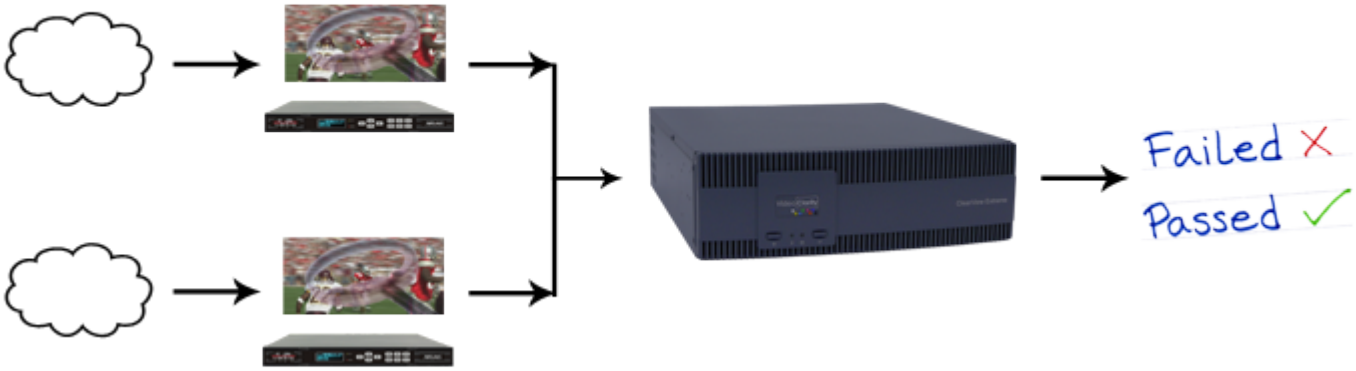
Video Clarity
Tools for Video Analysis



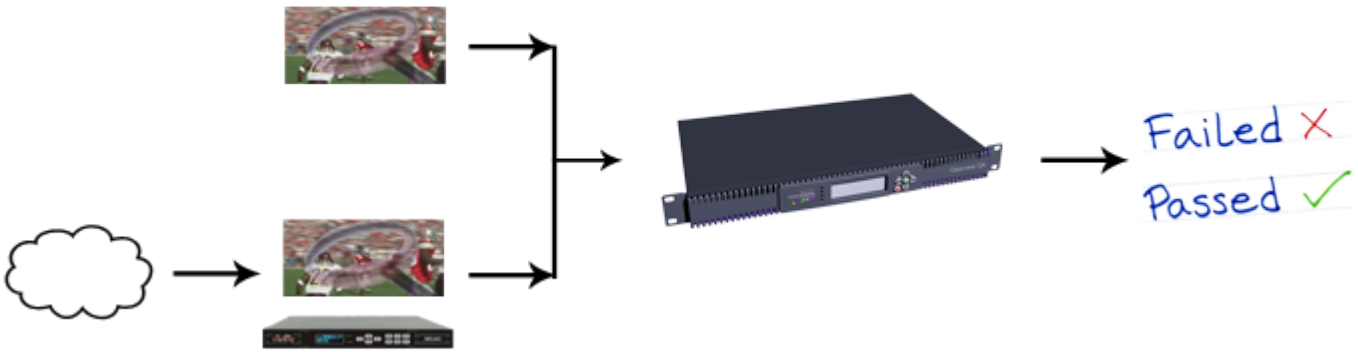
ClearView – Pass Fail Testing

Video Clarity
Tools for Video Analysis

Reference & Processed Sequences



Reference File & Processed Sequence



ClearView Graphical Interface

Video Clarity
Tools for Video Analysis

Summary

Video Clarity
Tools for Video Analysis

- High-quality, reliable video quality analysis and monitoring systems
- Product line is configurable for simple to complex testing requirements
- New products and features will continue to be added for a growing number of industry leading customers

Thank You