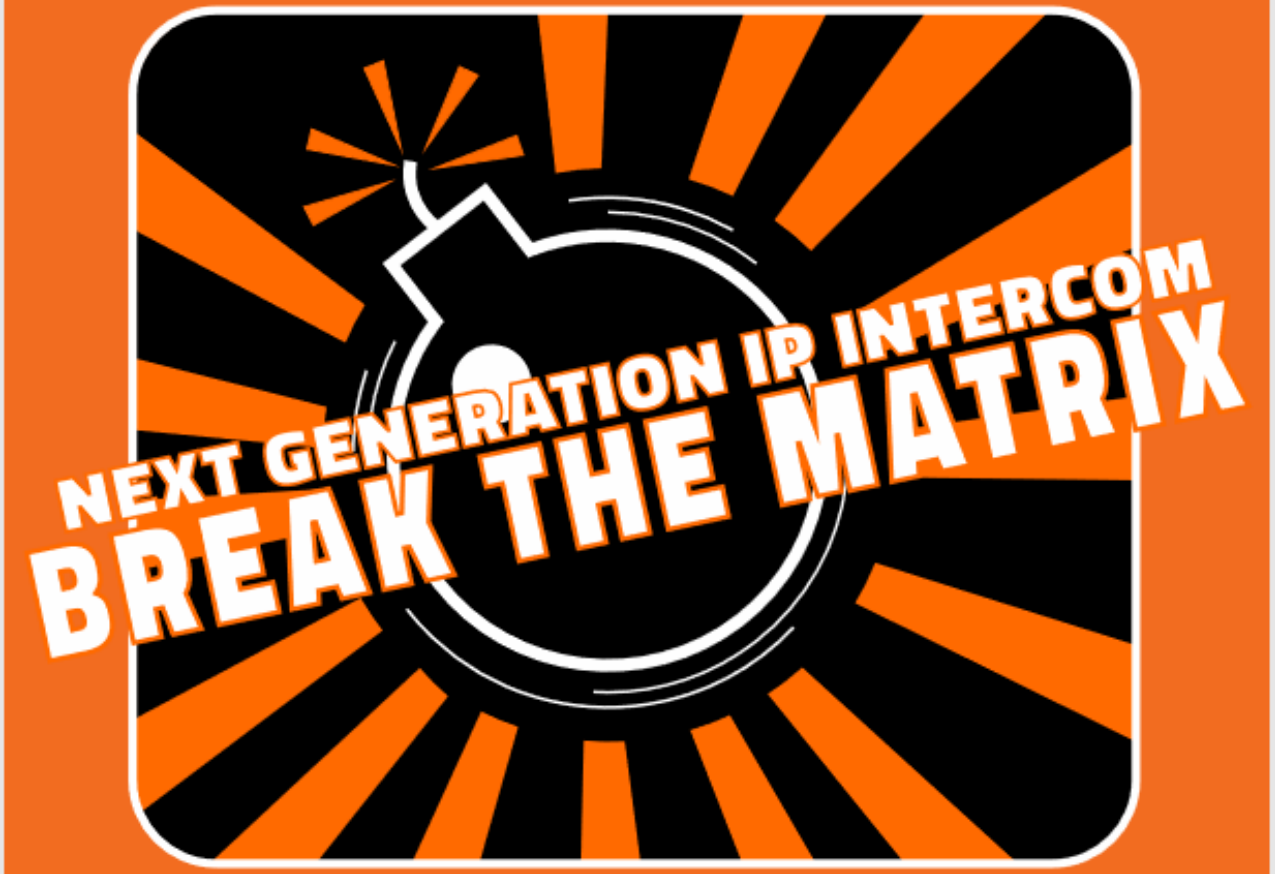
Telos INFINITY®



Martin Dyster

VP Business Development &

Project Director - Telos Infinity

THE TELOS ALLIANCE

AES SHOW NEW YORK CITY
2018

A SHORT HISTORY LESSON

The Telos Alliance – A Brief History

Started developing AoIP in 1998

Launched first AoIP protocol for broadcast in 2003: Called Livewire

15 Years of AoIP market experience

More than 80,000 devices deployed globally

Founder member of the AES x192 committee whose work became the AES67 standard

Livewire+ AES67 protocol is fully AES67 compliant

Fully committed to the SMPTE 2110 Suite

Active Session NO SESSION SAVED
3/2L
AC Mod
-24
DN
448
Kbps
48.0
KHz
Delete Preset
Telos VX
12:22:13

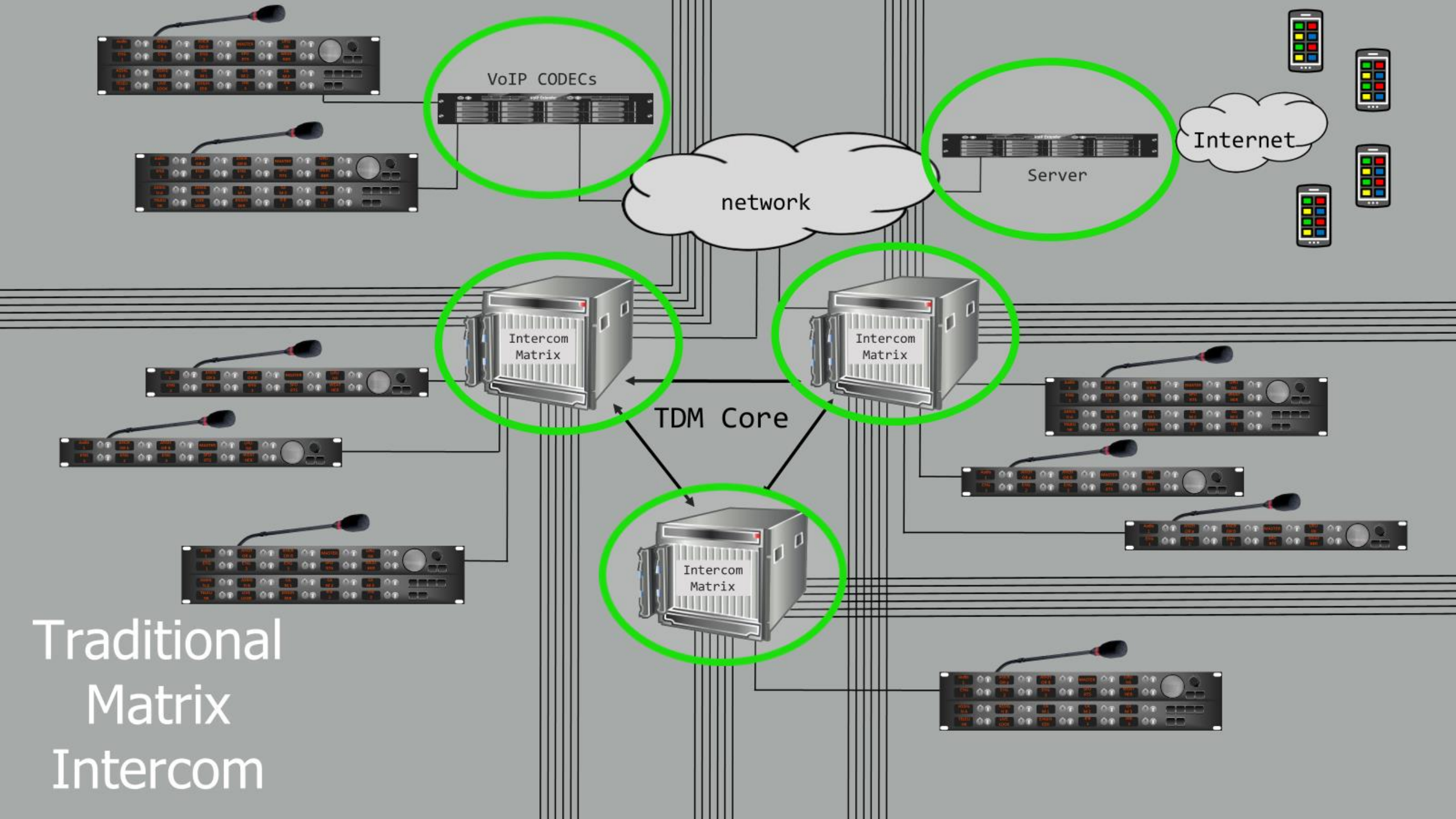
INTERCOM …..

LIFE AS WE KNOW IT

Matrix Intercom – Extensive Features

‘Traditional’ Matrix Intercom Systems do all of the following:

- Interface with VoIP / SIP Telephony
- Interface with mobile phone applications
- Offer ‘Software Panels’
- The option of Integrated wireless solutions
- AES67 / AoIP connectivity
- Rely on connection to a Central Matrix or Matrices
- System size is defined by a Matrix port count


VoIP CODECs
network
Server
Internet
Intercom Matrix
Intercom Matrix
Intercom Matrix
TDM Core
Traditional Matrix Intercom

A Matrix is a practical solution …

Partylines, IFBs and Groups all require mixing

Matrices can store configurations

Gain controllable I/O and crosspoints

Signal detection and monitoring is easy

Matrices are resilient – Dual Power/Dual CPU

Wide range of connectivity options

A known commodity

MATRIX-LESS INTERCOM

A GAME CHANGER

Designing an IP Intercom from the ground up

The challenge for Telos Alliance Development Team

- Produce ‘Familiar’ Software and Hardware components
- Meet or exceed expected Intercom functionality
- Use standards based protocols natively – AES67 / SIP / VoIP
- Interface with baseband and AoIP equipment seamlessly
- Develop a scalable and resilient solution
- Achieve all of the above with no Matrix or Engine whatsoever
- Use a purely distributed architecture

How does Infinity ‘Break the Matrix’?

Implementing a distributed model – DSP in every device

Dashboard Advanced Agent creates and maintains database of configuration – not required for system operation

Dashboard Software UI designed for users at all skill levels

Dual NIC and redundant PSU for resilient architectures

Telos Alliance xNode baseband to AoIP convertors

Telos VX for integrated telephony

Native AES67 connection to anything on network

Proven technology – thousands of devices in 24/7 service

Additional benefits

Plug and Play connectivity

HTML5 based UI means control and configure from any device

Infinite scalability - never run out of ports

Planned or ad-hoc changes made simple

Uses existing Media over IP infrastructure

Faster networks = Extended WAN = no need for codecs or interfaces

Local, Regional, National, even Global virtualized ‘matrix’ coverage

Lower Total Cost of Ownership

Communication and contribution audio on the same network

Simple Television Production Facility

Media IP Network

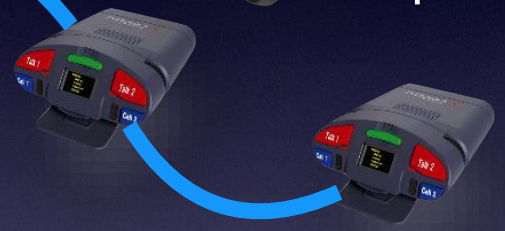
Production Control Room

Audio Control Room

Master Control Room

Studio Floor

Wireless Beltpacks



CCU

Analog/AES xNodes

Post Production Room

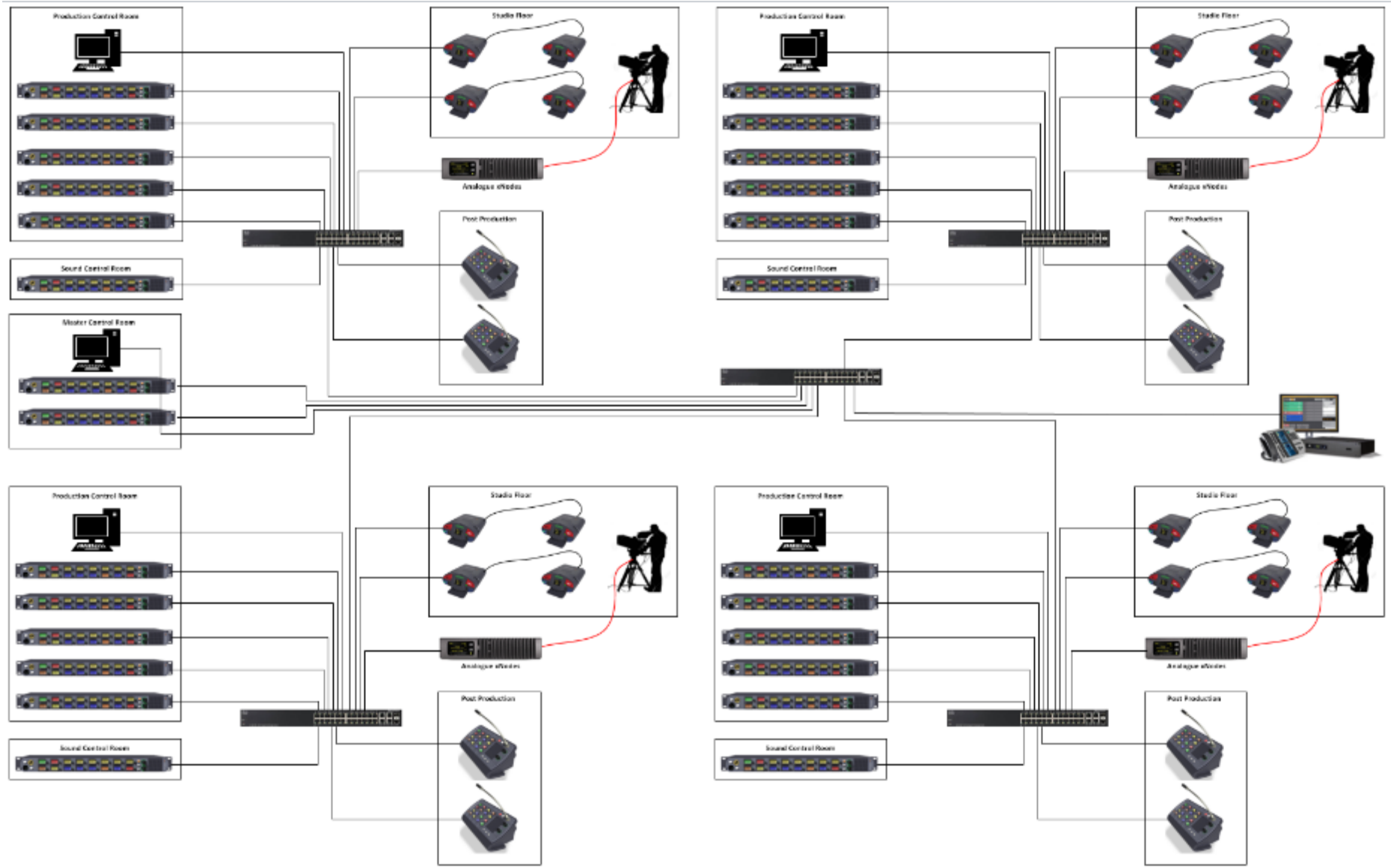
Legacy Equipment

Mixing Console

Multi Studio System

Example shows four similar Production Studios and Master Control connected via a common IT infrastructure.

Dashboard Advanced enables the users to manage their own studio configurations while the Master Control client has full administrative rights over the entire system

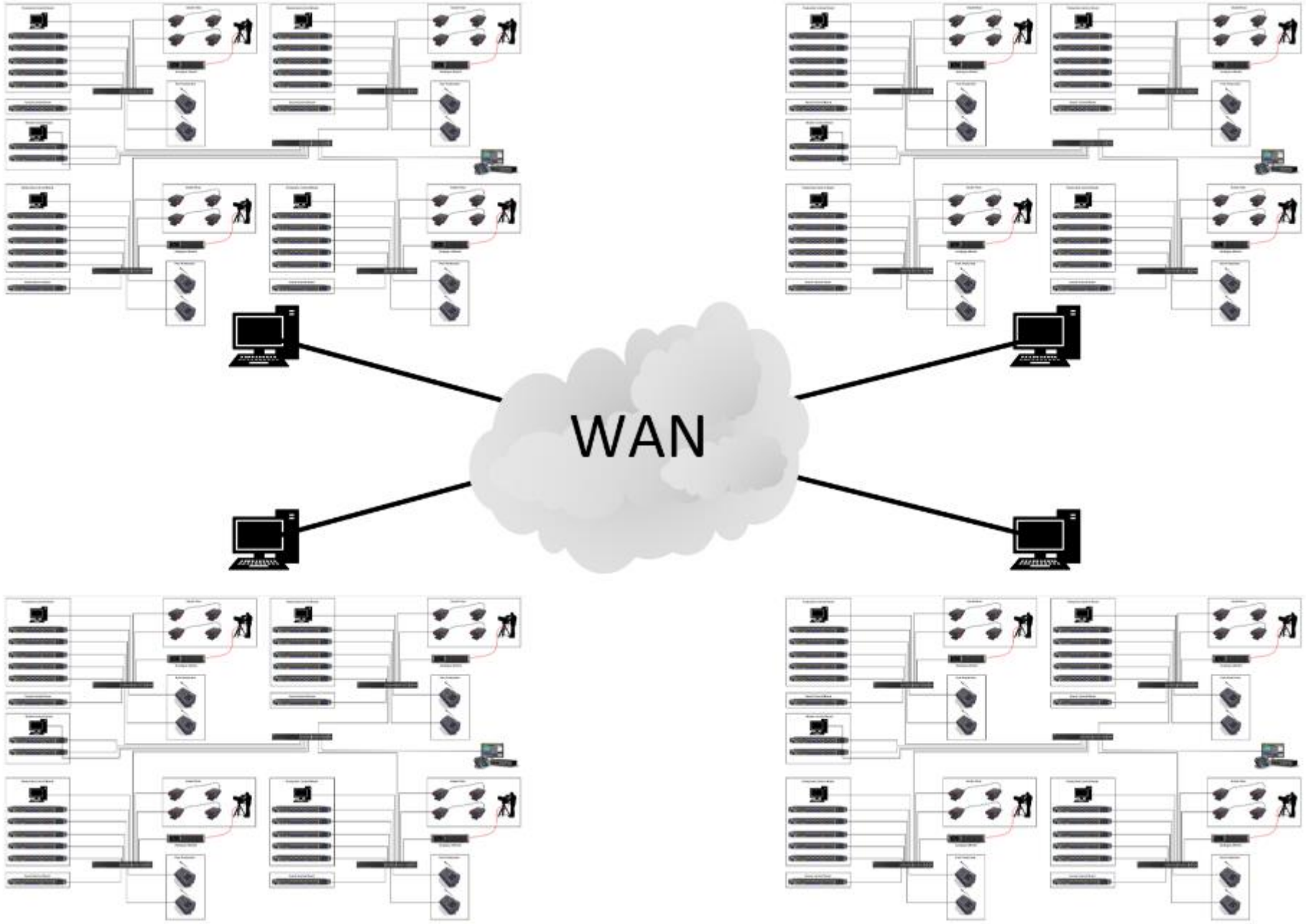


Multi Site System

Sites are connected using Telos Infinity software servers equipped with the adaptive OPUS VoIP codec

Dashboard manages each local client with overall administrative control assigned to one or more Master Control operations

Transparent high bandwidth WAN connections should work directly via either Multicast or Unicast connections

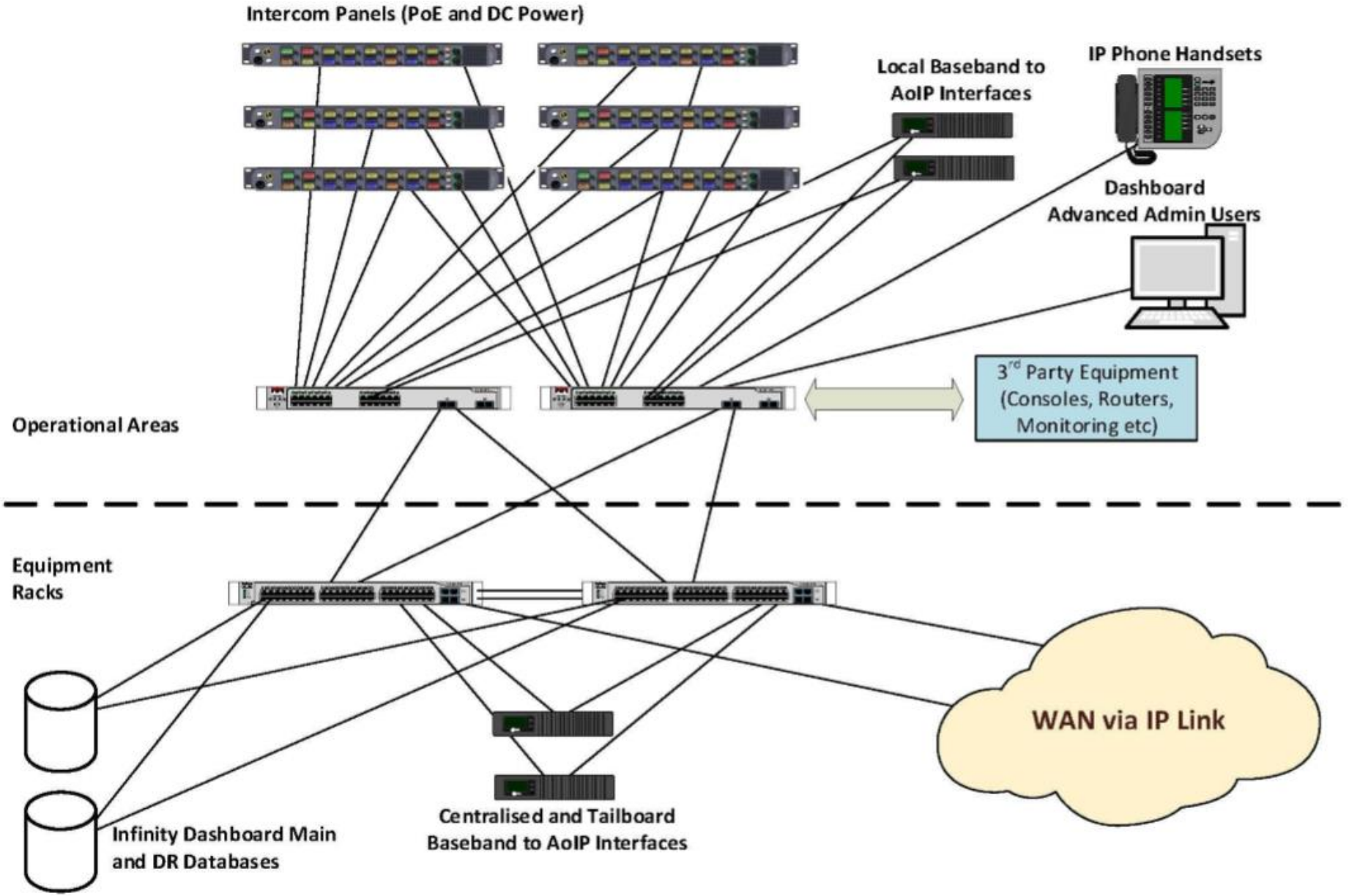


Network Resilience

Telos Infinity supports resilient network plans

Telos Infinity has dual NIC ports that can be used for dual connections or for separating media and control

Infinity also supports dual power (PoE and DC)



WEATHER FORECAST
25 C
Start at Any Size
Add, Move, or
Scale Economically

Connecting Telos Infinity to the wider IP world

Telos Infinity is fully AES67 compliant so……

Telos Infinity connects to any compatible AES67 network stream

All Infinity devices generate and receive 1ms AES67 packets

Native discovery protocol is Livewire

Dashboard Advanced has an AES67 SDP connection tool

Currently supports SAP (Dante) and will add Bonjour (Ravenna)

NMOS is a planned future development

3rd Party AES67 source/destination streams appear in Dashboard

No card or interface required

Managing a Telos Infinity system

Infinity Dashboard AGENT runs as a service – maintains a config database

Dashboard HOST runs as a service – provides user interface to database

System Admin connects to Server, manages system via HTML 5

Operators, Technicians and Engineers use login credentials to access system

Physical and virtual system can be divided in ZONES (Studios etc.)

System elements (Devices, Groups, PL etc.) can be divided into SCENES

Each Login client can be given restricted access to specific ZONES/SCENES

Scenes can be edited ‘live’ or offline

Dashboard Advanced logs all system activity (alarm conditions etc.)

PLUG
PROGRAM
AND PLAY!
Telos
INFINITY™