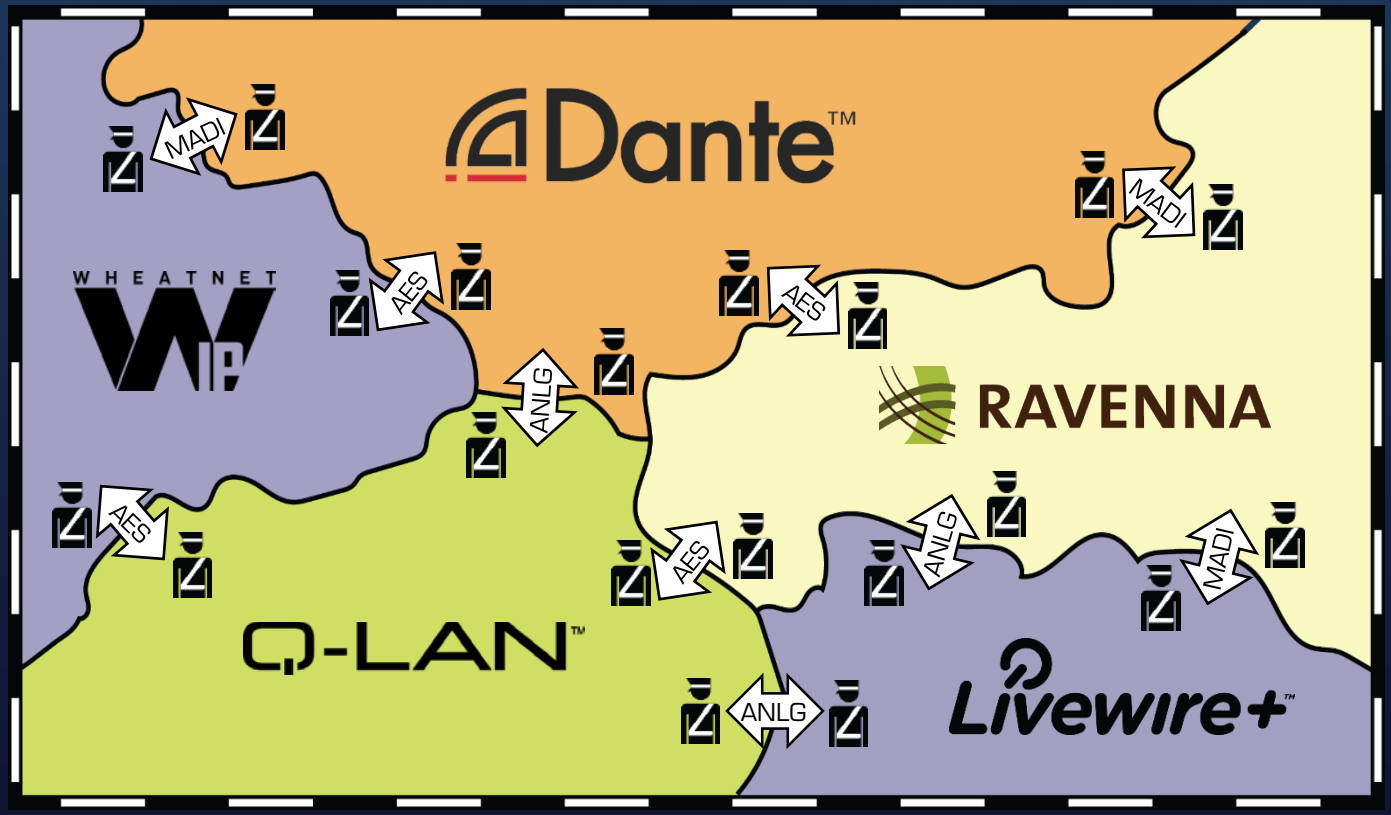
Introduction to AES67

Patrick Killianey
Network Applications Engineer

YAMAHA

Dante
WheatNet-IP
Ravenna
Q-LAN
Livewire+

Dante™
WHEATNET
RAVENNA
Q-LAN™
Livewire+™


Dante™
MADI
MADI
WHEATNET
AES
AES
ANLG
RAVENNA
AES
AES
ANLG
MADI
Q-LAN™
ANLG
Livewire+™

AES Standards Board

The Original Goal:

- ☑ Common Interchange Format
- ☒ ~~"Another Network"~~

A Word Processing Analogy…

Microsoft® Word

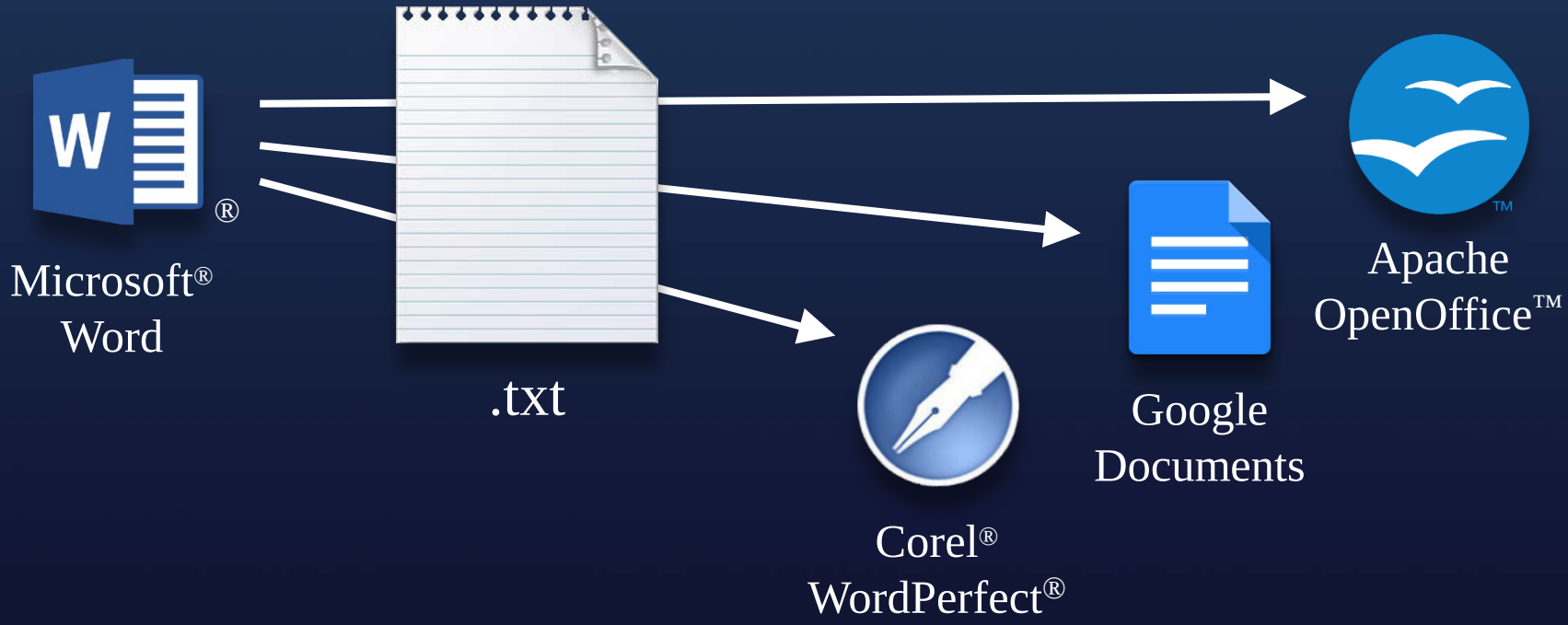
Corel® WordPerfect®

Google Documents

Apache OpenOffice™

A Word Processing Analogy…

A Word Processing Analogy…



AES Standards Board

"New Highest Common Format"

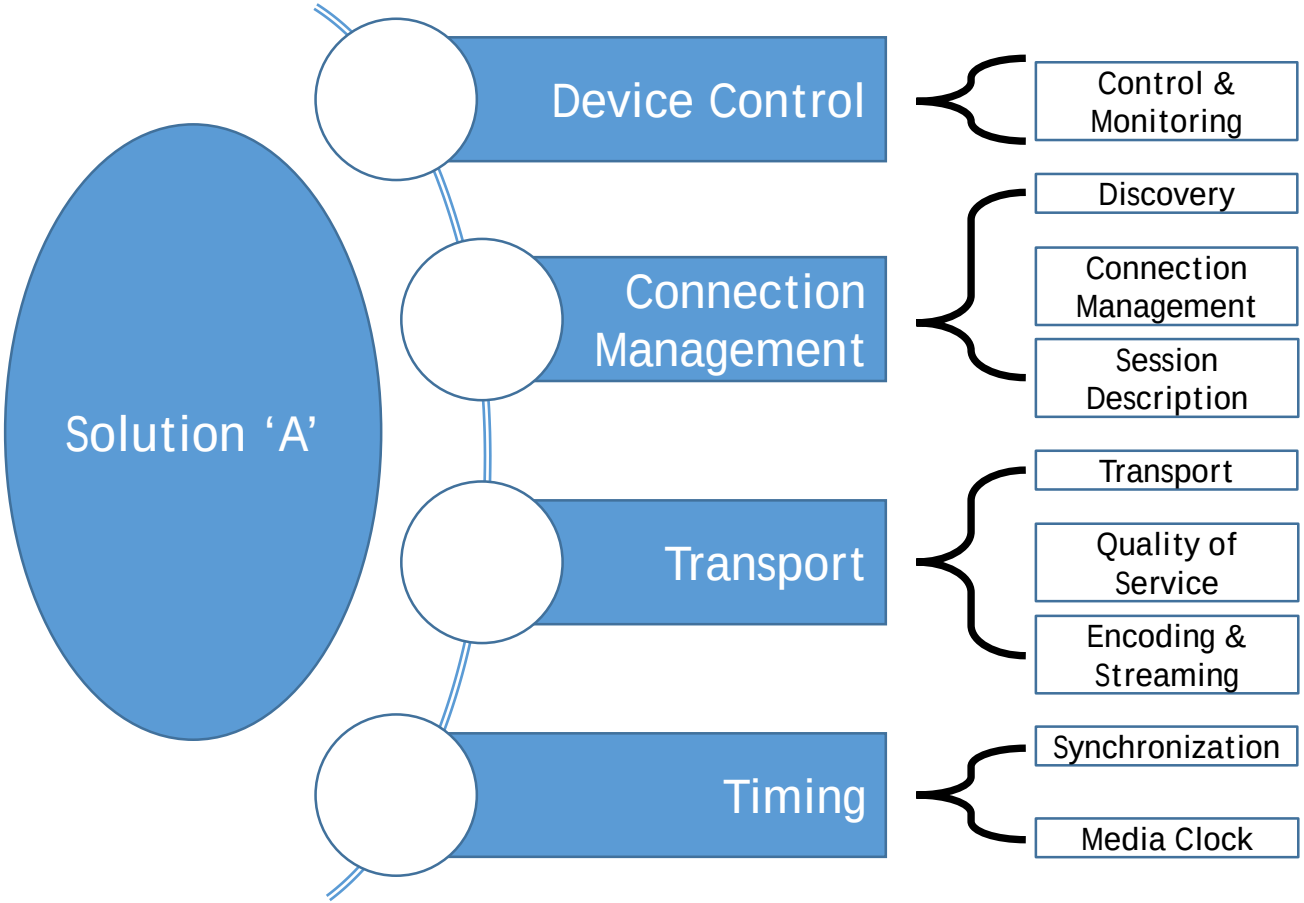
- AES67
- MADI
- AES/EBU (aka AES3)
- Analog

Media Networking Alliance

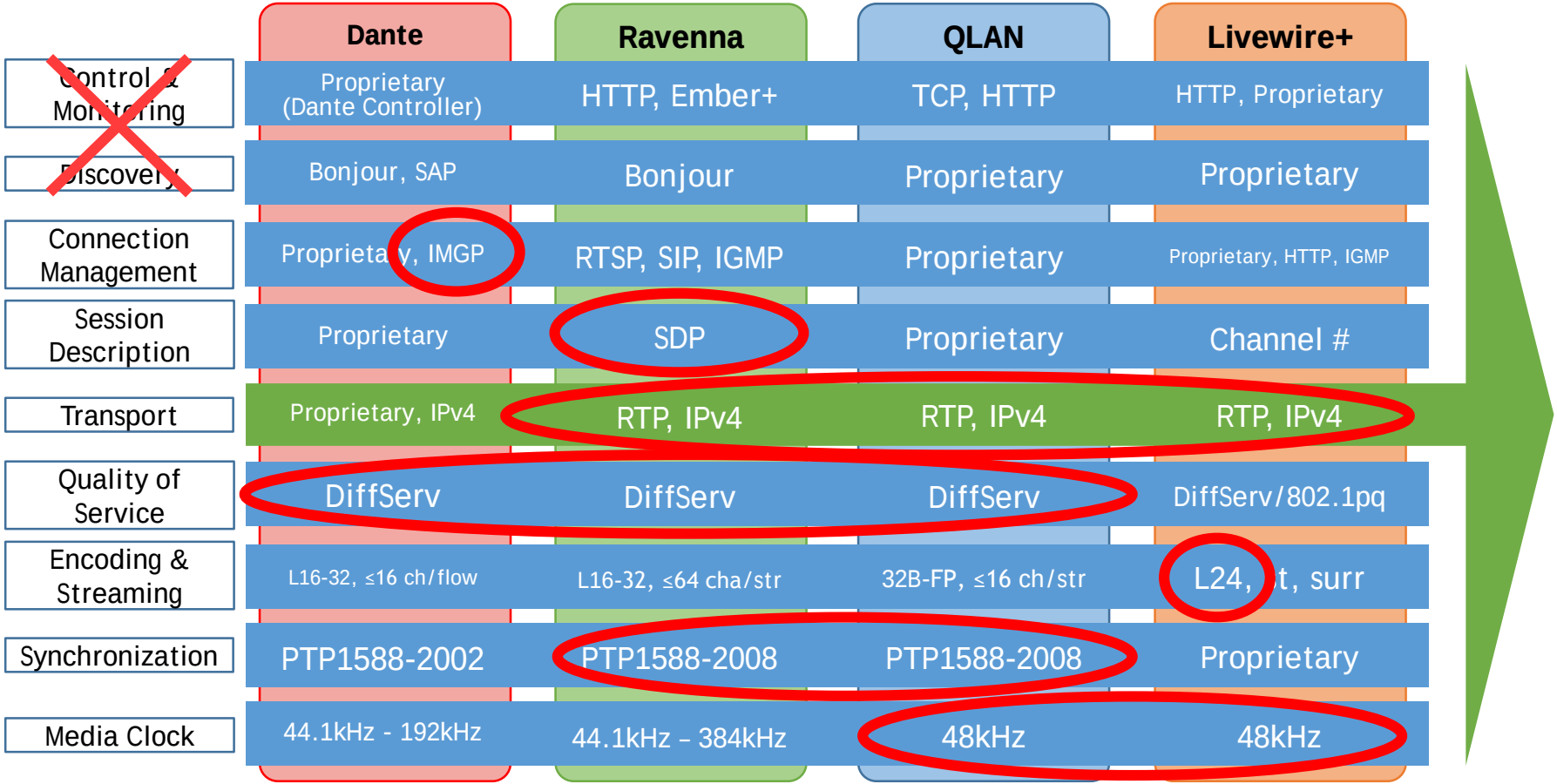
Promoting the Adoption of AES67

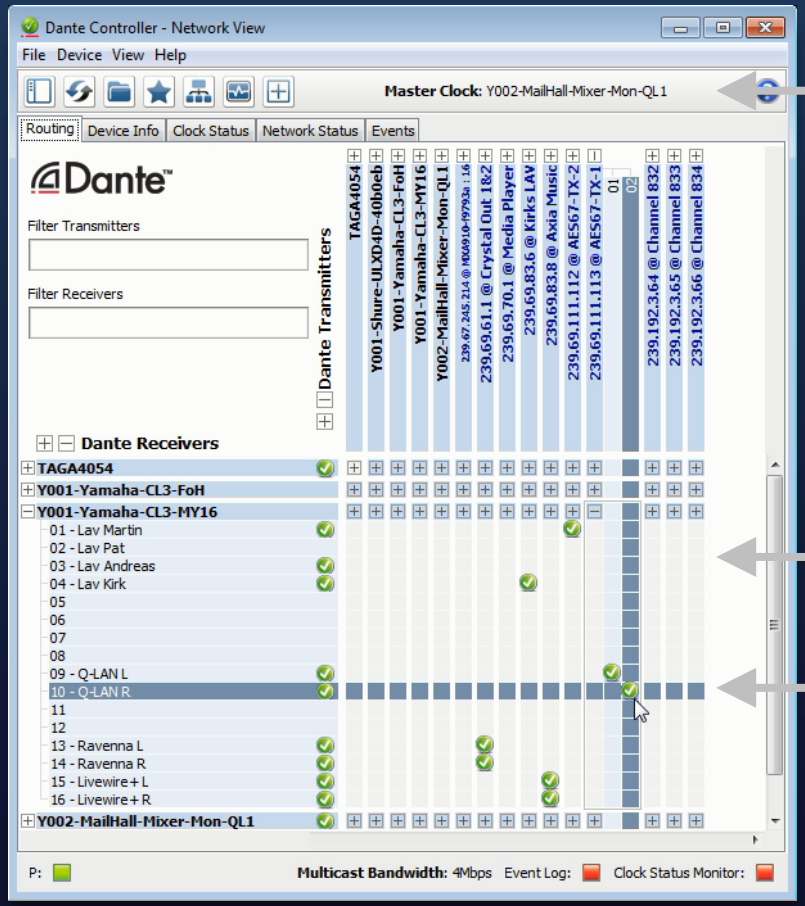
ALC NetworX GmbH
Archwave Technologies, B.V.
ARG Electrodesign
Attero Tech, LLC
Audio-Technica
AVA Networks, LLC
British Broadcasting Corporation (BBC)
Bosch Security Systems, Inc.
Calrec Audio
Cymatic Audio
Digigram
DirectOut GmbH
Dongguan 3G Audio Technology Co., Ltd.
Focusrite Audio Engineering
Genelec
Harman Professional
Lawo Ag
Merging Technologies
NTP Technology
Ningbo Soundking Electronics
QSC, LLC
Riedel Communications, GmbH & Co. KG
Shure Incorporated
Solid State Logic
Suzhou Fortune Technology Co.
SVSi
Swedish Radio AB
The Telos Alliance
TOA Corporation
Walt Disney Imagineering
Ward-Beck Systems
Wheatstone Corporation
Yamaha

What's in a Networked Audio solution?



The Road to Incompatibility…

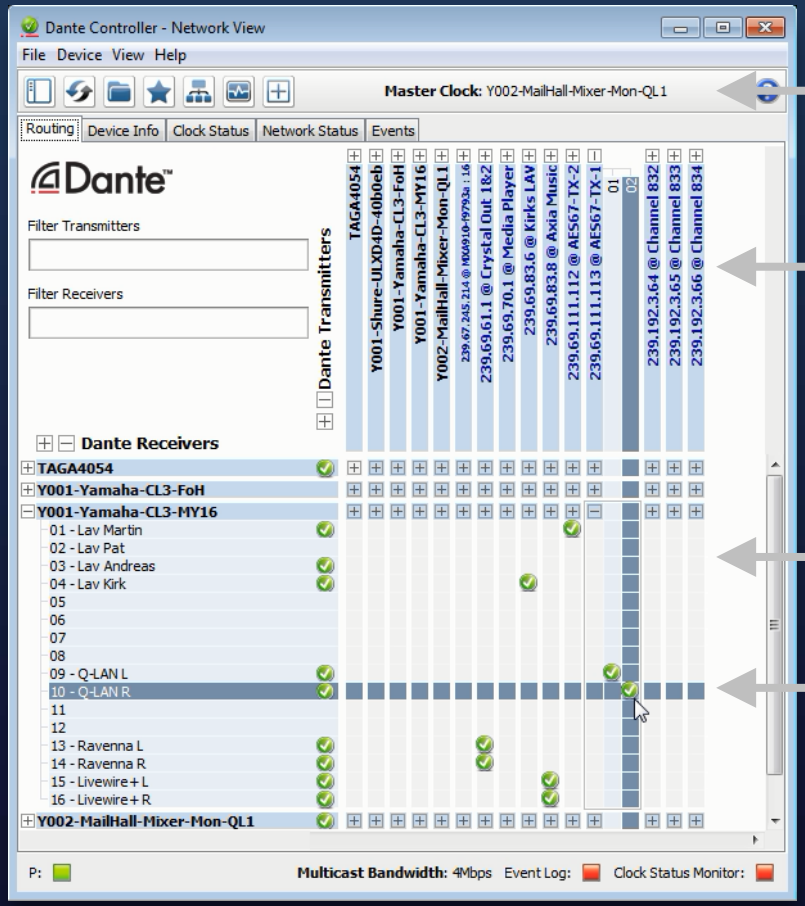




Word Clock:
PTPv2 (IEEE 1588-2008)

Connection Management:
SDP (RFC 7273)

Audio Transport:
IGMP v2, RTP (RFC 3550, 3551)



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?

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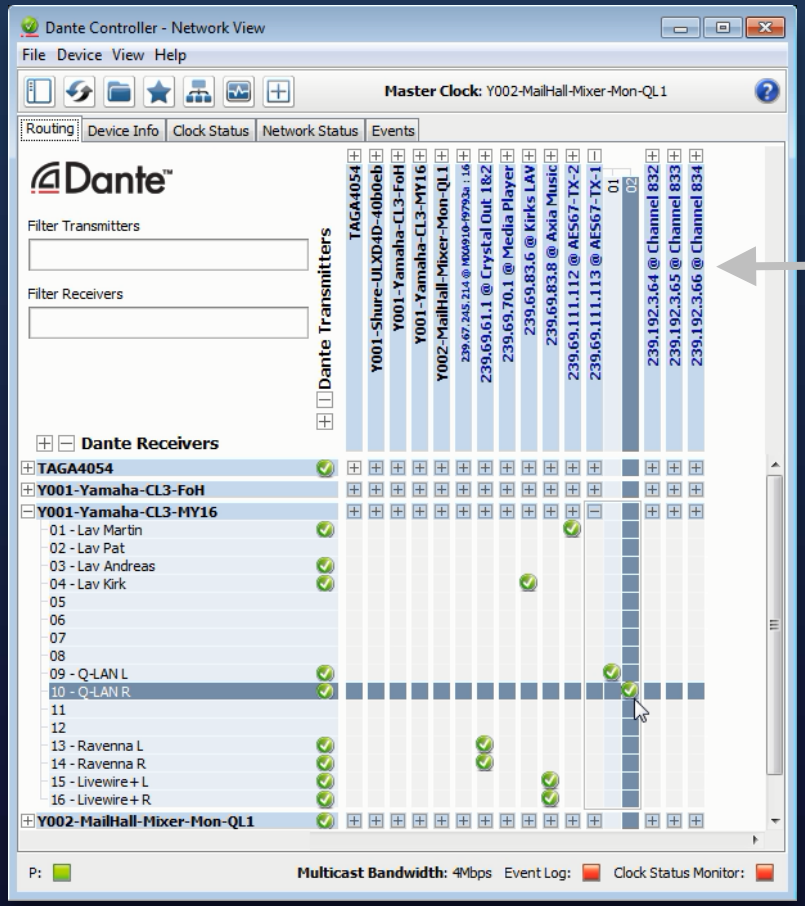


Discovery
(SAP)

What Does AES67 Say About Discovery?

(4) Discovery Methods are Acknowledged; SAP is one of them.

(0) Discovery Methods are Explicitly Required.

Discovery

AES
67
SAP
Manual
Scotch
Magic Tape
3M
ELMER'S
Glue-All
MULTI-PURPOSE GLUE
New Stronger Formula!
Dries Fast
Safe & Non-Toxic
4 FL OZ (118 mL)
PRO-GAFF

RAV2SAP.exe

RAV2SAP Utility

Discovery:

Translates between Bonjour and SAP discovery; allows manual creation of announcements.

Audio Flow:

Audio does not flow through the utility – audio passes directly between audio endpoints.

The Native Network Solution Benefits

A Single Utility and Design Viewpoint

No need to learn “design conventions” for each platform.

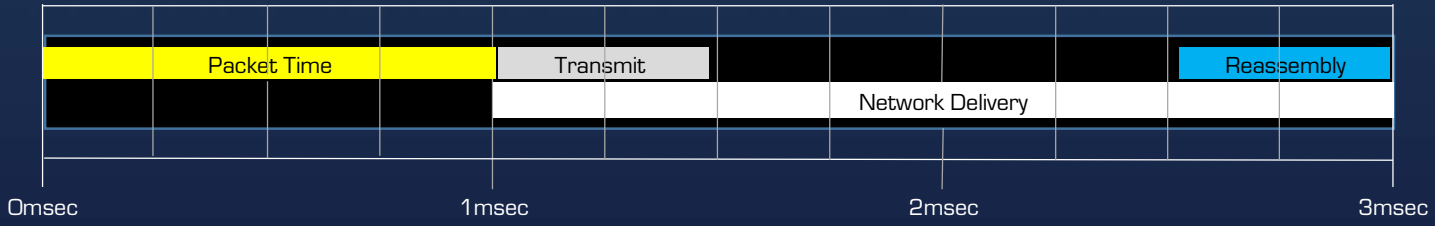
Lower Latency Performance

AES67 default is 3msec. Dante defaults to 1msec, safely achieves 0.25msec or less.

Advanced Control & Diagnostics

Network Health Utilities, Remote Control, Security Options, etc.

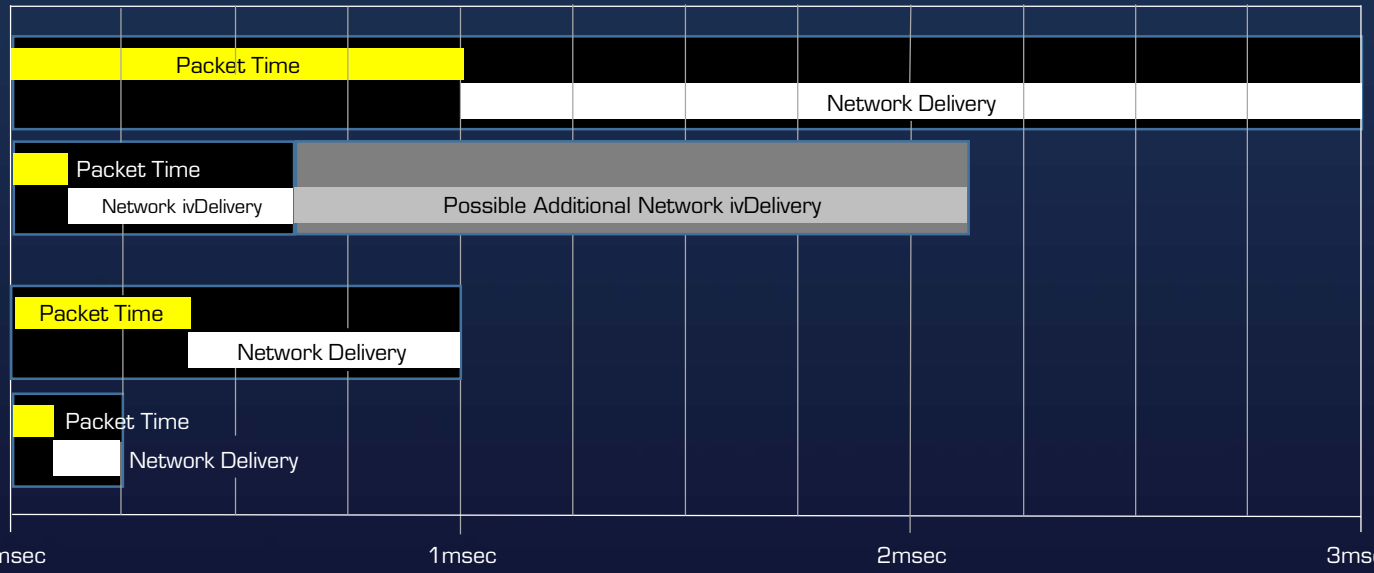
The Elements of Network Latency



The Native Network Solution Benefits

The Elements of Network Latency

AES67



Dante™

Packet Time: 0.125 to 4msec

Network Latency: ≥2x to 17x Packet Time, 0.5msec to 20msec

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A Strong Case for AES67

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A Strong Case for SMPTE 2110

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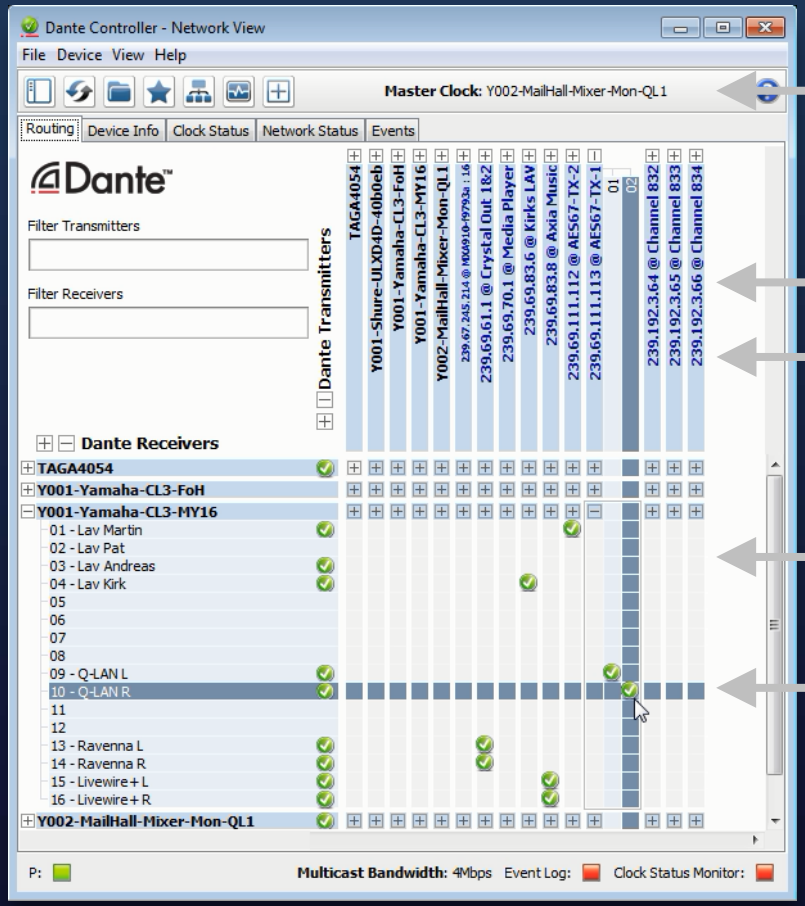

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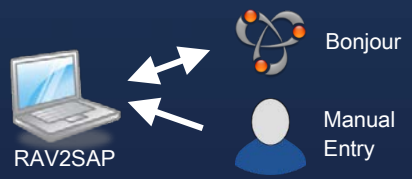
PTPv2 (IEEE 1588-2008)

Discovery*:
SAP ↔
NMOS?



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