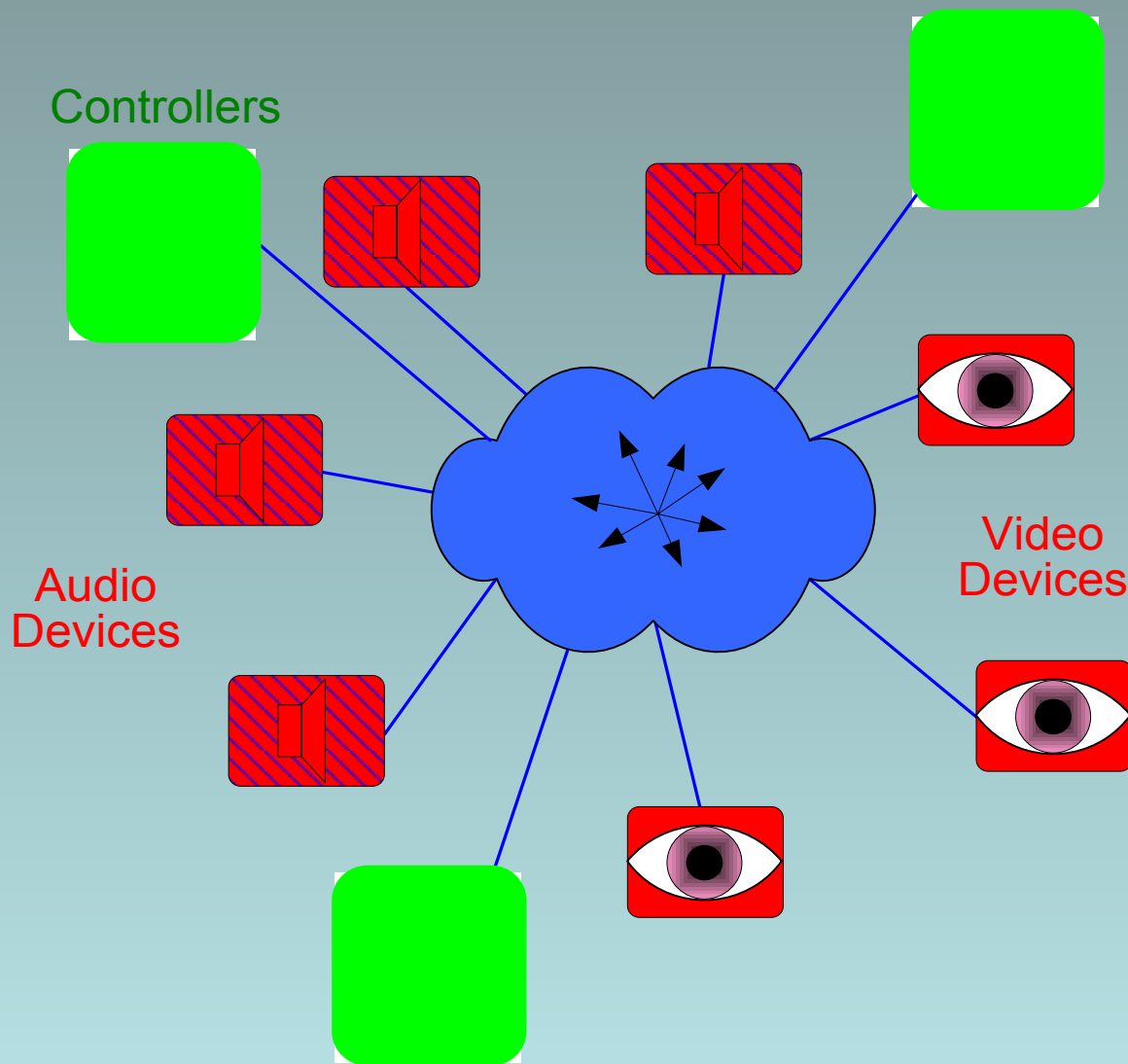


AES70

The Open Control Architecture

Ethan Wetzell
Chair, OCA Alliance Marketing Group
Platform Strategist, Bosch Communications





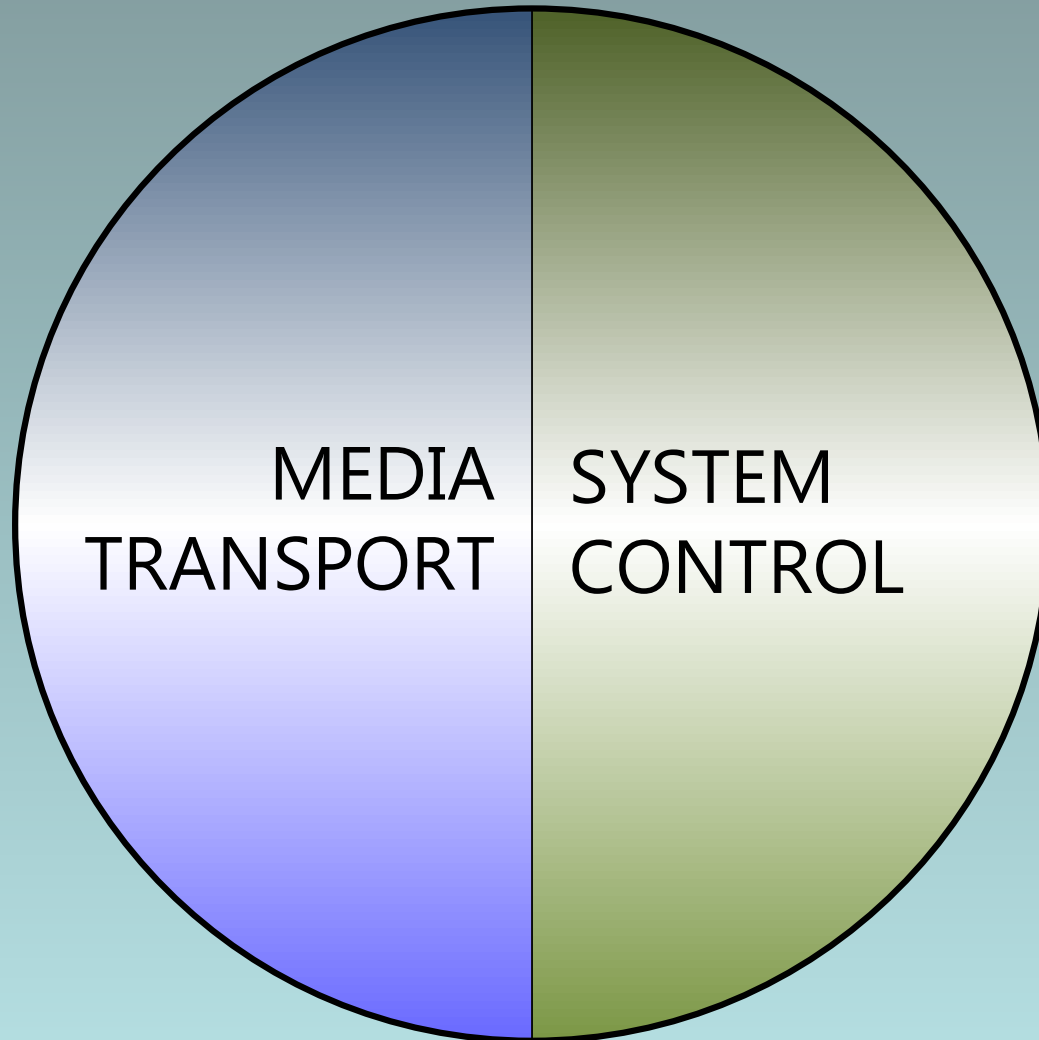
You can move a signal from A to B, but what are you going to do with it when it gets there ?

OCA : AES70

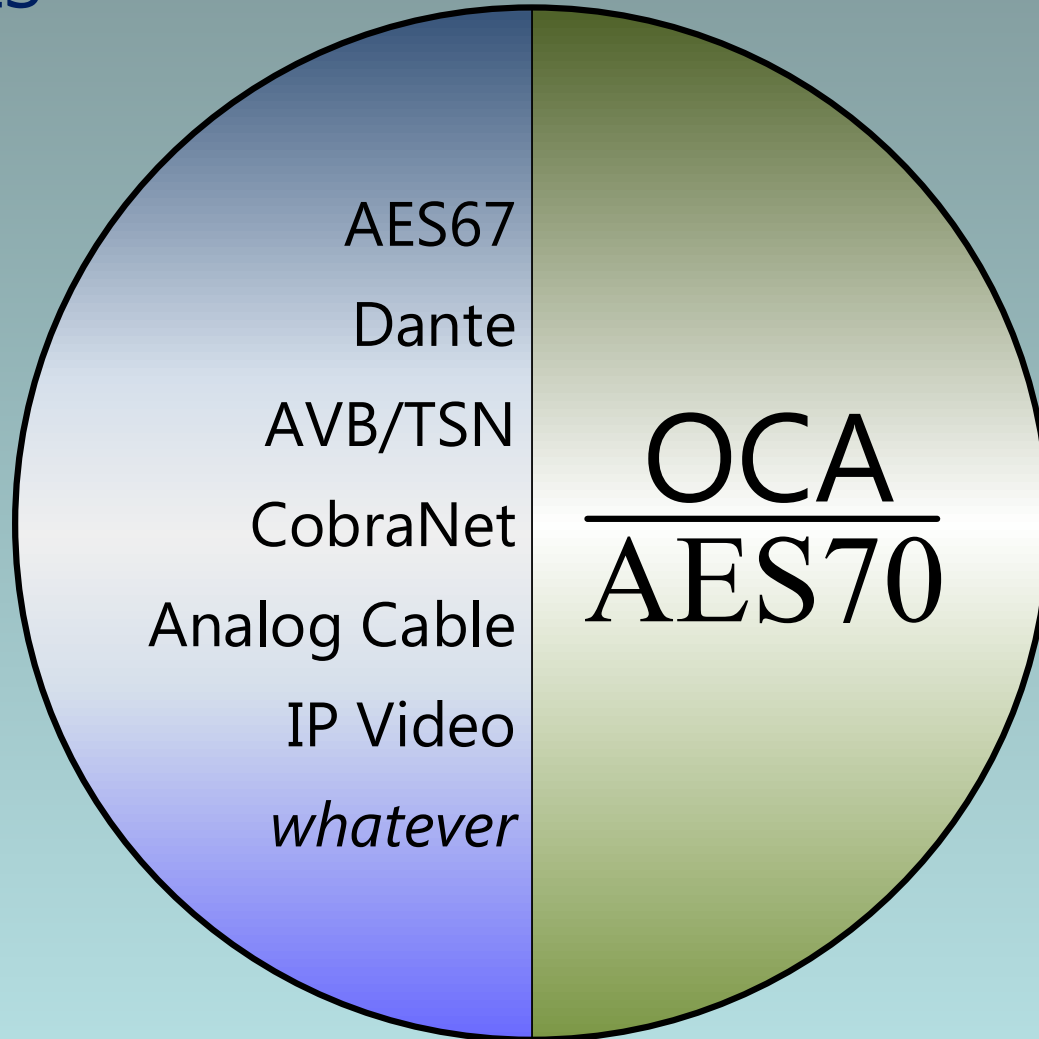
- AES70: The standard
 - The specification of the technology
 - The work done in the AES
- OCA: The technology ecosystem
 - The tools and technology based on AES70
 - Includes hardware and software
- OCA Alliance: The trade association
 - The organization that develops, supports, and promotes OCA

AES70 was created from the public OCA 1.3 specification. Technical differences between the two are minor and few.

MEDIA
NETWORK



PROTOCOLS

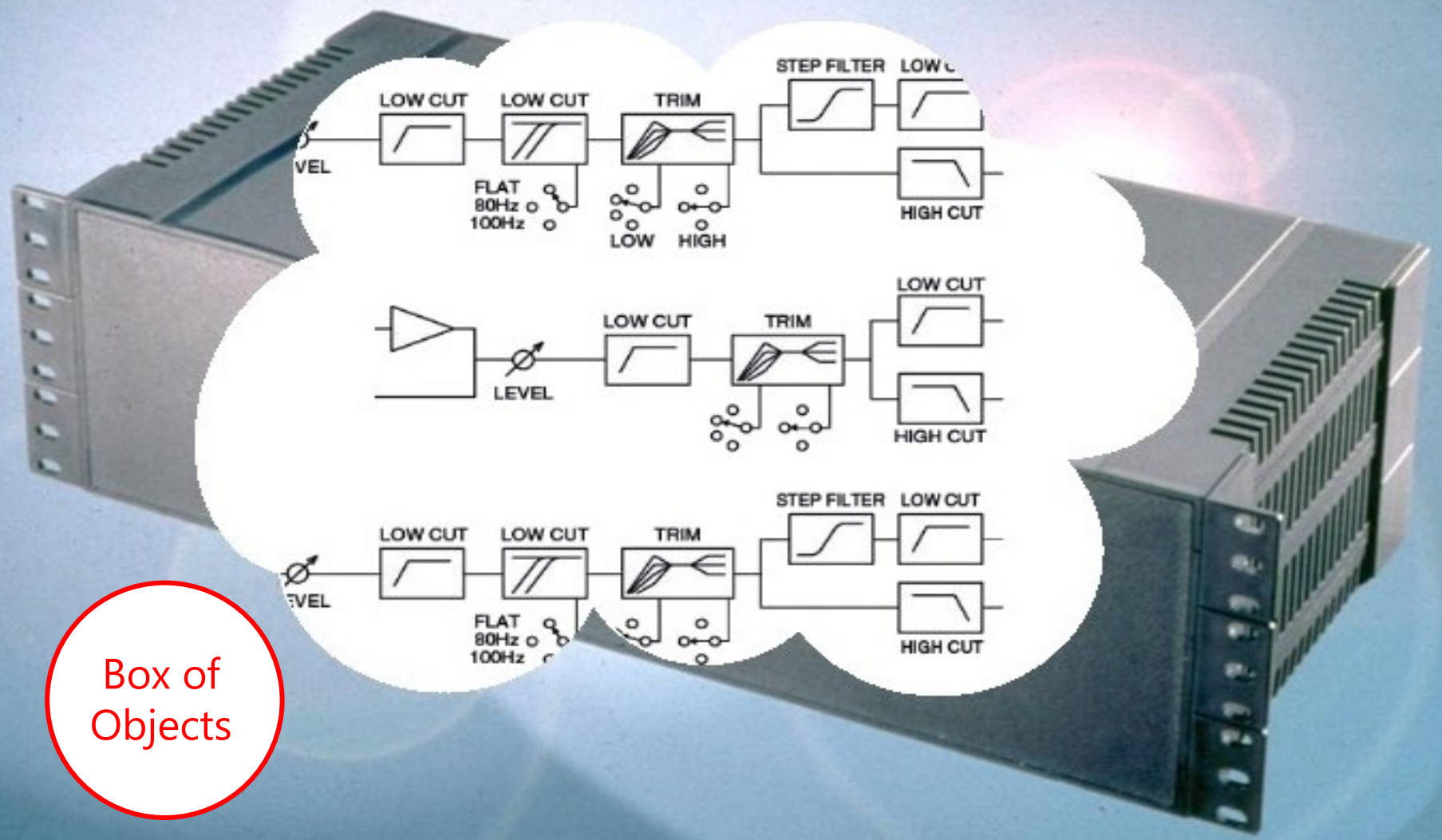


Why AES70?

- AES70 is the only control architecture standard that is *all* of the following:
 - Open and license-free
 - Pro application oriented
 - Scalable up to huge network sizes
 - Suitable for mission-critical applications
 - Friendly to proprietary product features
 - Futureproof
 - Secure
 - Able to support dynamic DSP device reconfiguration
 - Heterogeneous-network capable

A Peek Under the Hood

AES70 Device Model



Box of Objects

AES70-2015 Control Repertoire

Media Connection Management

- Connection control
- Directory/discovery

Additional Functions

- Control grouping (~VCA groups)
- Crossfading
- Snapshot & preset management
- Reconfigurable DSP device setup
- Reliable firmware updating

Signal Monitoring

- Level sensors (meters)
- Frequency sensors
- Time interval sensors
- Temperature sensors
- Arbitrary numeric sensors

Signal Processing

- Gain controls
- Mutes
- Switches (n-position)
- Delays
- Equalizers
- Filters (IIR & FIR)
- Limiters & Compressors
- Expanders & Gates
- Levelers
- Matrices
- Signal generators
- Arbitrary numeric and text parameters

+ *Proprietary extensions as needed*

Current AES70 Products

- d&b Audiotechnik
- Focusrite
- Bosch Communications
 - Electro-Voice
 - Dynacord
 - RTS-Telex
 - Bosch Conference
- Beckhoff Automation

Current OCA Alliance Members

[1602 Group](#)

[AEQ](#)

[Archwave Technologies](#)

[Atlas Sound, LP/Innovative](#)

[Electronic Designs, LLC](#)

[Attero Tech](#)

[Bittner Audio Int. GmbH](#)

[Bosch Communications](#)

[Systems](#)

[Calrec](#)

[CB Electronics](#)

[d&b audiotechnik GmbH](#)

[DeusO GmbH](#)

[Digital Audio Labs](#)

[FBT](#)

[Focusrite](#)

[Harman Professional Group](#)

[Rational Acoustics, LLC](#)

[Stage Tec](#)

[Suzhou Fitcan Technology](#)

[TOA Corporation](#)

[THAT Corporation](#)

[The Telos Alliance](#)

[Valcom](#)

[Ward-beck Systems](#)

[Yamaha Commercial Audio](#)

Current & New Topics

- **AES70 for connection management**
 - AES70 already offers a standard solution for current connection management problems in audio and video systems.
- **AES70 profile development**
 - AES70 profiles are starting to be defined for specific application areas.
- **AES70 over additional network types**
 - Protocol specifications are under development for USB and Bluetooth; other network types will be addressed, too.
- **AES70 gateway specifications**
 - The OCA Alliance will work with others on specifications for interfacing AES70 to other control schemes such as SMPTE 2071 and Ember+.
- **AES70 functional expansion**
 - The AES70 specification will (compatibly) add various new control functions over the next few years. A number of these have already been identified.

Information

- **AES70 standards documents**
 - www.aes.org/standards/blog/2016/1/aes70-open-control-architecture-160102
 - AES70 is in three documents and two appendices.
 - Downloads are free to AES members.
- **AES70 in the AES Journal**
 - *The Open Control Architecture*
[JAES Volume 61 Issue 4 pp. 185-200; April 2013](#)
- **OCA Alliance**
 - Website: ocaalliance.com
 - The OCA Alliance is a trade association. Its members are companies.
- **AES Standards Working Group**
 - The AES working group responsible for AES70 is:
AES SC-02-12, Working Group on Audio Applications of Networks
 - Anyone can participate in this group; AES membership is not needed. A membership application form is [here](#), or you can just attend a meeting at an AES Convention to join.

Free AES70 Developer Resources

- OCA Microdemo
 - The OCA Microdemo is a demonstration product developed by OCA Alliance members. Its primary purpose is to prove that OCA can run well in lightweight hardware environments. The MicroDemo meets minimum requirements for AES70 compliance, and provides a small set of OCA-controlled application functions as well.
 - The custom software, finished schematic diagrams, and PC board layouts, for the MicroDemo
 - Download source code here: [OCAMicroOpenSource_r60.zip](#)
Download hardware design files here: [OCA Micro Hardware Package 20160802.zip](#)
- Focusrite RedNet Virtual OCA Device
 - The Focusrite RedNet Virtual OCA Device is a device simulation developed by [Focusrite](#). It is useful when testing OCA Controllers. The device simulation is available as a Windows executable.
Download ZIP Archive here: [Focusrite RedNet Virtual OCA Device.zip](#)
- OCA.js JavaScript library
 - OCA.js is a javascript library that supports OCA. It can be used for building web-based OCA device controllers. It's an open-source component developed by OCA Alliance member DeusO, and is available on GitHub here: <https://github.com/DeutscheSoft/OCA.js>
- AES70 Implementation Chart
 - The AES70 Implementation Chart is an Excel spreadsheet template that offers a standard way for documenting the OCA objects of a device. Download here: [OCA Implementation Chart v06 .xltm](#)
- OCA Wireshark Plugin
 - [Wireshark](#) is a widely used network protocol analyzer. This plugin allows analyzing OCA network traffic using wireshark.
 - Download here: [OCP.1.lua](#)