# Introduction

OCA is an architecture for connection management and control of media devices over digital networks. It defines a common remote control and discovery language that allows devices from different manufacturers to exchange and respond to device control and audio stream connection information to create interoperabilty between these devices. OCA is a license-free core technology for network media systems.

OCA is not a network media transport standard, but it can be used with any of the usual streaming media transport protocols, including AES67, Dante, AVB/TSN, or even legacy schemes such as Cobranet. The standard technical specification of OCA is published as the Audio Engineering Society standard **AES70.**

Application example

Visualize a Conference Centre. In the meeting rooms and public areas, ceiling or on-wall loudspeakers are installed, driven by brand "A" amplifiers. In the performance room are amplifiers and loudspeakers from brand "B", and a microphone preamplifier from brand "C". The voice alarm system is from brand "D". In the master control room is a mixing console from brand "E".
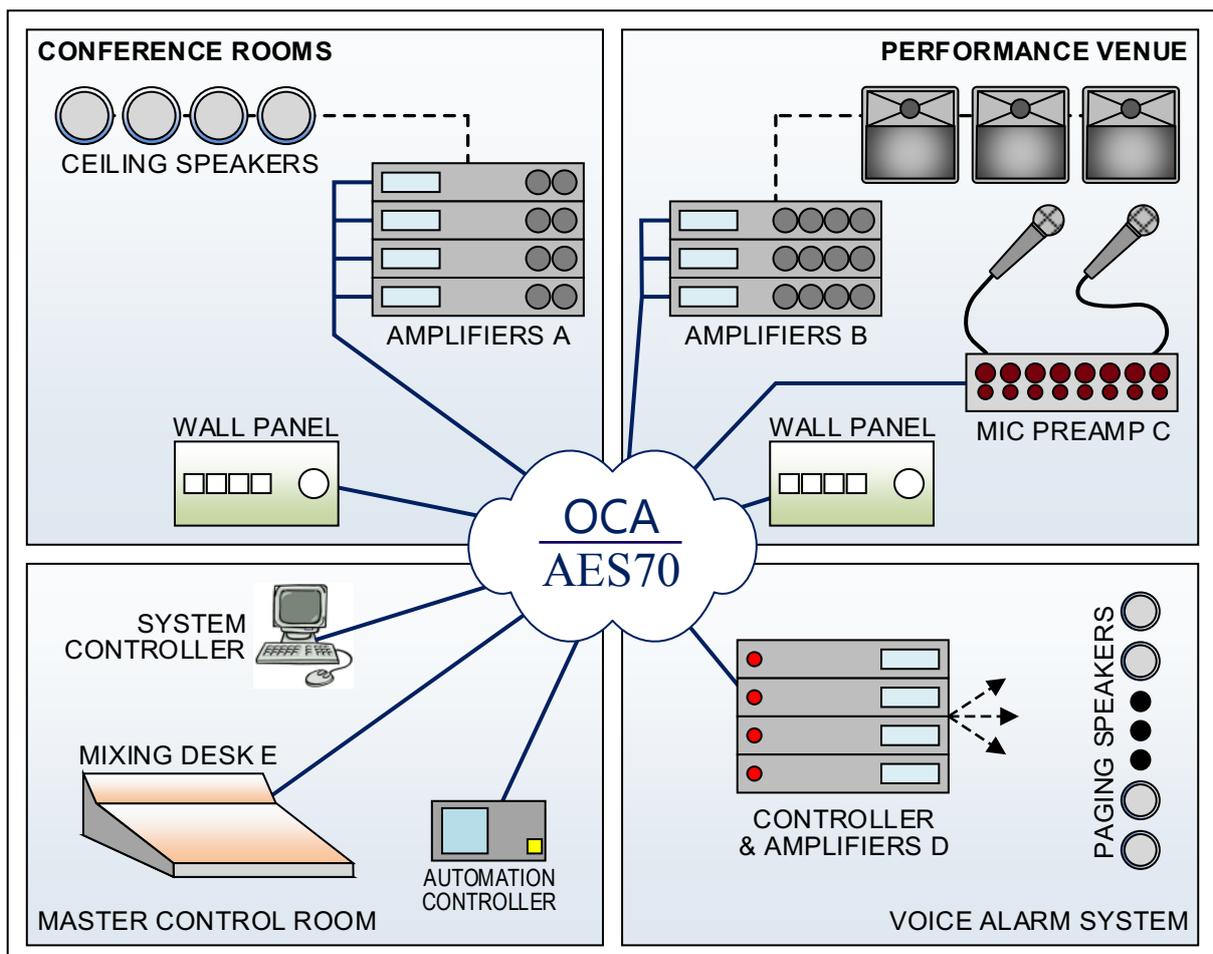
By defining one common remote control and monitoring language for all of these devices, OCA brings **Control Interoperability** to this system. Control Interoperability means the ability for all the devices from their various manufacturers to be controlled and monitored by a common software regime.

Here's how OCA's control interoperability benefit users, designers, and manufacturers of media equipment in the Conference Centre example:

1. **Designers and users have a wider choice of products.** In interoperable systems, the best in-category products can be chosen without the burden of having to integrate additional proprietary control mechanisms. The result is better systems at lower engineering and/or bill-of-materials costs. For example, the Conference Center has chosen amplifier brand "A" for the paging subsystem, and amplifier brand "B" for the performance room subsystem.

2. **System controllers are easier to create**. Without a common control language, the programming of custom and semi-custom system controllers will be time-consuming and expensive. Under OCA, integrators do not have to implement diverse device-specific control languages, and can spend more time where it counts - understanding and satisfying user needs. For the Conference Center, using OCA would lead to better software and superior user experiences in the control room and at subsidiary control points.

3. **Advanced functions may be readily implemented**: If the Conference Center uses OCA:

   - The mix operator might use controls or presets on the brand "C" mixing desk to change performance room amplifier gain settings from dinner to concert level.

   - The mix operator might adjust gain of the brand E microphone preamplifier in the performance room.

   - Intelligent controllers might be provided to monitor gain structure and equipment health across the entire system.

   In general, OCA paves the way for implementation of advanced automation of systems, up to and including the use of artificial intelligence to make operation easier and to optimize sonic results.

4. **Integration of multiple systems is easier.** In the Conference Center, the performance sound subsystem and the the voice alarm subsystem must be integrated to allow the performance subsystem to deliver voice alarm evacuation announcements. If both of these subsystems use OCA, fulfilling this requirement will be straightforward.

5. **An ecosystem is arising around OCA**, in which supplementary products are offered to support the creation of fully integrated solutions. The Conference Center has two wall panels that control certain aspects of the subsystems. Using OCA will make it easier to find cost-effective, off-the-shelf, general-purpose panel products for this purpose.

6. **Standards-based systems are more future-proof and easier to expand.** As a public standard, OCA is committed to maintaining upwards compatibility in the future. For example, the using OCA will make it easier for the Conference Center to accommodate new amplifiers, signal processors, and control stations as they become available.

7. **Standards-based systems tend to have lower risk of obsolesce than proprietary control schemes**. Using OCA will give the Conference Center a control scheme that will stand the test of time, and will not depend on any one manufacturer's success or technical direction.

Conclusion

For media system designers and users, OCA is a flexible, cost-effective system control approach. When paired with a digital network media transport mechanism - AES67, Dante, AVB/TSN, etcetera - the result is a complete media network platform for digital audio systems of all sizes.

For manufacturers, using OCA will give products the ability to compete in the growing universe of standards-based multivendor network audio solutions. Moreover, because OCA is a complete control solution, using OCA will give engineers more time to spend on developing valuable product features, rather than creating proprietary control schemes.