AES TC-FOA Meeting Minutes, Sunday 10:00 AM – 11:00 AM, October 28, 2012, Room 124
AES 133rd Convention, San Francisco, CA, USA

TC-FOA

Tentative Agenda:

New stories in fiber adoption.

- OEM Manufacturers
- Equipment manufacturers: new technologies
- User stories

State of MADI and MADI2 or other extensions

Mixed signal networks over fiber:

- WDM advances by OEMs
- User stories

Redundancy in mission critical networks for:

- Live sound
- Studio

Challenges to fiber adoption in the industry

Attendees:

Fred Morgenstern (Neutrik, Charlotte, NC) – Chair for Ron Ajemian
Fred Besnoff (Neutrik, Charlotte, NC)
Bradford Craig (Marketplace, Los Angeles)
Larry Bryan (performing arts complex, Nashville, TN)
Warren Osse (Systems integrator, Pennsylvania)
Marc Brunke (optocore, Munich Germany)

Discussion:

Warren Osse: Laser enhanced 50 micron fiber is becoming the standard. Single mode is disappearing. LC is becoming the connector of Choice. The ST is a better connector, but LC is inexpensive, with a smaller form factor.

Marc Brunke: SC is going out of fashion. It is associated with 100Meg speeds. The trend now is to LC and things like Infiniband, but only LC is catching on.

Fred Morgenstern: An MTP option from Neutrik is coming.

Marc: 50 micron is much better than 62.5 multimode at high speeds, with less effective jitter at 1Gig or higher. Additionally, 50 micron is now optimized far beyond 62.5. These incremental improvements are only being made for 50 micron, not 62.5.

Marc: single mode is still doing well, especially for two-way multiplexing over a single fiber.

Warren: there is a big migration to digital AV transport over fiber when there is any sort of distance. Infrastructures will continue to migrate as new connectors not requiring hand polishing (Leviton,

Corning, etc.) become more ubiquitous. The cost of terminated fiber is now very close to copper. Termination toolkits can be purchased for $500, and test equipment for as low as $1,000. Connectors are $10 to $20 each. For high volume, on-site fusion splicing is being used extensively. The connectors from different manufacturers are all very similar at this point. Crestron DM is doing very well in this space.

Fred M: we all agree that, for new installs, it makes sense to pull both single and multimode fiber, including some dark fiber.

Marc: in Europe, all new installs have 24 fibers in one cable pulled in, to allow plenty of spare capacity. The video guys prefer for these cable to be single mode. The audio and data people don't care so much. For city halls, airports, etc., they think more in data terms, so they prefer multimode.

Marc: for 10Gig speeds, required for 4k video, multimode is more of a challenge. Single mode is better there.

Marc: regarding redundancy, historically, customers are concerned more about power supplies and cabling and not the fiber-equipped boxes. Even though new power supplies are much more reliable than the older, linear supplies, people still worry about them. After the power supplies, users tend to look to the switch and then the stage boxes for redundancy. (For stage boxes, users will patch some channels to one box and some channels to another, so not all channels will be lost in the event of a failure.) A good idea is to use two, physical, separated cables.

Warren: the network people's standards are correct--using redundant, separated cable links.

Warren: AVB is only going to be audio when it is first released. They are still having trouble with getting video integrated.

Marc: the transport standard from Midas is free, but it's too expensive to use. Cobranet and Dante are too expensive. If AVB winds up being too hard to implement, then it will become too expensive, unless, as Warren says, there is wide adoption so that, with hundreds of thousands of users, the chip prices for AVB come down. A big question is: to what extent do we re-use consumer technology, to twist it into something professional while benefiting from the low cost of consumer components?

Next Meeting:

May 4-7, 2013 at AES 134th Convention in Rome, Italy