

acn soon in second Public Review networking for performance

...the glue that will bring pervasive networking to entertainment technology

So What Does it Do?

ACN is 'middle-ware' – the software glue that joins consoles, user interfaces and functions like position, pitch, colour or brightness together. It does *not* specify the lower layers such as cables and connectors, nor does it dictate how consoles or moving lights are to operate. It *does* provide a rich language for them to get the most out of each other and it joins them via TCP/IP to the infrastructure provided by Ethernet, Firewire, 'WiFi', Bluetooth, modems, optical fibres etc.

We're Riding the Wave

ACN uses or adapts existing technology wherever possible – much of ACN is a synthesis of Internet protocols. As new techniques emerge, ACN can take advantage of them and being modular, if one piece is superseded, the others can still be used.

What Connector Does it Use?

ACN is not a physical standard so specification of connectors and cabling is not part of ACN. There are other standards for this. ESTA already has a Recommended Practice for Ethernet Cabling. Ethernet will be a very common carrier for ACN.

How Does it Work?

There are three main pieces to ACN, each of which stands by itself, but which share a unified architecture, and a set of "inter-operability profiles" which specify how the pieces must fit together to inter-operate.

1. Session Data Transport – provides management and reliability, removing the need for the inefficient repetitive refreshing of DMX512 as the sender can be sure that the message will get through.
2. Device Management Protocol – provides the messages to set or examine the functions of a device – hundreds and thousands of functions and devices.
3. Device Description Language – a language for describing relationships and functions of the devices accessible through DMP, a language readable by the controller itself.

How Will it Affect Me?

Some features which distinguish ACN from other systems are:

- ❑ Inter-operability across manufacturers – not limited to a desk and dimmer paradigm.
 - ❑ Scalability up to huge integrated systems – to theme parks and beyond.
 - ❑ High speed dynamic feedback – can give comprehensive lamp condition monitoring, real-time position of moving pieces, tracking of actor generated inputs or real time remote VU metering.
 - ❑ Unbounded data types and meanings – not just 8-bits *vs* 16-bits but also 32-bits, 64-bits, floating point, strings and other types as necessary.
 - ❑ Self configuration – detection of the detailed capabilities of other devices allows controllers to configure themselves and the system.
 - ❑ Proxy devices can extend functionality of the system – third parties can produce plug-in boxes which will enhance the performance of other manufacturer's equipment. e.g. to add colour matching or special effects generators.
 - ❑ Compatible with off-the-shelf routers and infrastructure – ACN protocols can operate across the Internet. Allows remote access for troubleshooting and other benefits.
 - ❑ Cross compatibility with existing infrastructure and systems such as DMX512/RDM is possible using convertor boxes which will present legacy equipment seamlessly in the ACN world and can take full advantage any feedback available.
- What designers and manufacturers choose to do with these capabilities is up to them. ACN removes the shackles and allows the innovators among us to let their imaginations soar.

Where Does ACN Come From?

The ACN project was started several years ago by forward thinking people in ESTA's Control Protocols Working Group who could see that simply shipping DMX512 type traffic over Ethernet was not enough.

The ACN task group has had input from most major entertainment lighting manufacturers, as well as scenic automation, show control, audio companies, independent consultants etc. many of whom have dedicated very significant resources to make ACN happen. The designers are cooperating and freely exchanging resources to an unprecedented extent.

PLASA's strong participation has made ACN a truly international effort from early in the process.

ESTA Standards

ACN is an open standard from ESTA's Technical Standards Program which generates American National (ANSI) standards in an open and fair process – ACN's official ESTA name is 'E1.17'.

A first round of public review has already passed and the task group expect a second public review very shortly.

Where Can I find out More?

For technical details, download the public review draft from www.esta.org/tsp. Please do make comments during the review period – instructions are on the website.

If you are simply waiting to use it, look around you. The standard is still in development but the products are on the show floor.

<http://www.esta.org/tsp/cpwg.html>



acn a standard for the future – here today