# Minutes
# Control Protocols Working Group
Thursday, November 12, 1998
Hyatt Regency Hotel
Phoenix, AZ


Chairs:       Steve Carlson; Rosco/Entertainment Technology; Principal; Producer
                Steve Terry; PRG/Production Arts; Principal; User

Recording secretary:      Karl G. Ruling, ESTA

Members attending:      Peter Willis; Andera Ltd.; Principal; Producer
                Wayne David Howell; Artistic Licence (UK) Ltd.; Principal; Producer
                Sierk Janszen; Avenger Showcontrol; Observer; Producer
                Tim Bachman; Barbizon Light; Principal; User
                Trevor Forrest; Celco; Alternate; Producer
                Tal Miron; Compulite R & D; Observer; Producer
                Mikael Fahl; Dataton AB; Observer; Producer
                Doug Fleenor; Doug Fleenor Design; Principal; Producer
                Ed Jones; Edwin Jones Co.; Principal; Producer
                Jon Ide; Electronic Theatre Controls, Inc.; Alternate; Producer
                Greg Heinzle; Electronic Theatre Controls, Inc.; Alternate; Producer
                Ed Arend; Electronics Diversified Inc.; Principal; Producer
                Scott Rempel; Electronics Diversified Inc.; Alternate; Producer
                Philip Nye; Engineering Arts; Observer; General interest (changed
                      organizational representation)
                Nils Thorjussen; Flying Pig Systems  Ltd. (US); Principal; Producer
                Robert Goddard; Goddard Design Co.; Principal; Producer
                Dave Higgins; Gray Interfaces; Principal; Producer
                Lary Cotten; High End Systems; Principal; Producer
                Edward Paget; Jones & Phillips Associates, Inc.; Principal; General interest
                Rick Leinen; NSI Corporation; Principal; Producer
                Tim Cox; PLASA ; Alternate; General interest (joined at this meeting)
                John Huntington; PRG/Thoughtful Designs; Alternate; User
                George Kindler; PRG/Thoughtful Designsd; Alternate; User
                Bill Ellis; PRG/Vanco Lighting Services; Observer; User
                Paul F. Mardon; Pulsar Ltd.; Principal; Producer
                Steve Unwin; Pulsar Ltd.; Alternate; Producer
                Mitch Hefter; USITT (Rosco/Entertainment Technology); Principal; User
                Robert Barbagallo; Scéno Plus; Principal; General interest
                Milton Davis; Strand Lighting; Alternate; Producer
                Richard Lawrence; Strand Lighting Ltd.; Principal; Producer
                Brian Dowd; TMB Associates (NJ); Principal; Producer
                Peter Brooks; Zero 88 Ltd.; Principal; Producer

Visitors:     Goffe Schat; Avenger
             Jim Janninck; Alcorn McBride, Inc.
             Harold Hallikainen; Dove Systems
             Michel Van Gysel; Avenger NV
             Mark W. Davis; Belden Wire and Cable

1    Opening Remarks

Steve Terry welcomed all to the meeting at 9:05 a.m.

2    Attendance and membership

2.1   Introductions of those present

Each person introduced himself and stated his company affiliation.

2.2          Determination of quorum (11 needed)

Steve Carlson and Steve Terry looked at the crowded table and announced, "We have a quorum"

2.3          Recognition of alternate voting members

Steve Terry reminded alternates that the rules allow only one vote per company. Jon Ide, alternate
for ETC, said he would be acting as the principal for this meeting.

2.4          Requirements for membership

Steve Terry stated our open policy for membership, but reminded people that if they wanted to be
voting members, they needed to be committed to attending the four meetings a year.

2.5          Processing of new membership requests

Steve Carlson read the applications were received from:

    Tim Cox; PLASA; alternate; general interest
    Philip Nye; Engineering Arts; observer; general interest. Change of representation.
         Previously represented DHA.
    Tom Thorne, Flying Pig Systems, observer, producer
    Ken Wagner; Walt Disney Imagineering; observer; user
    Wayne Howell, Artistic Licence, producer, change of voting status from observer to principal
    Stephen J. Tyrell; Quantum Logic; observer; producer
    Michael (Sandy) Twose; Gray Interfaces; alternate; producer

Carlson asked if there was a motion to accept the new members, and there was a unanimous show
of hands.

3    Approval of the minutes from the previous meeting

Ted Paget moved that the minutes be approved as written. Mitch Hefter seconded the motion.
Unanimous by show of hands.

4    Call for patents

Steve Carlson read the call for patents:

    "ESTA intends to publish no standard that contains protected intellectual property, unless
that property can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent
disclosure to implement this intent. ESTA does not conduct patent searches and does not warrant
that its standards contain no protected intellectual property.
    "In keeping with the open disclosure policy, I ask if anyone present wishes to notify the
working group of the existence of a patent or copyright that might protect material in a standard
being developed by the working group. You need not be the holder of the patent or copyright in
order to notify the working group of its existence."

Carlson also read the Anti-Trust Statement:

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this Working Group will reject or nullify any actions that restrain trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.
"ESTA legal counsel has informed us that any member of this working group may be found individually liable for any action that restrains trade taken by this working group. An individual convicted of a violation of the Sherman Act may be fined as much as $100,000 and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee."

5      Approval of agenda

John Huntington asked that he be allowed to give an AES-24 update under new business. Ted Paget moved that the agenda be accepted with this addition. Mitch Hefter seconded the motion. Unanimous by show of hands.

6      Old Business

6.1    E1.3 update

Ruling reported that the document is in public review, and will be until January 5, 1999. The public review was announced in the November 6 issue of ANSI's *Standards Action*.

6.2    E1.11 (DMX512/1999 or whenever) matters:

6.2.1  DIN/DMX/IEC (Steffans, Hefter, and Ruling)

Mitch Hefter and Karl Ruling reported. Hefter reported that the most recent messages from Tony Douglas-Beveridge indicated that attempts to have DIN 56390 be circulated within the European Community for comment had been unsuccessful, and that we were unsure of where the document was in the publication cycle.

Ruling reported that he had written to the secretary of the US Committee to the IEC pitching the idea of making DMX512 an IEC standard, but he had not had a reply yet. Ruling said the IEC procedures were complicated, but that an IEC standard would give us an international standard, which we could adopt in the US as an American National Standard and would obviate the need for a DIN standard.

6.2.2  Physical Layer Task Group Report (Willis)

Peter Willis reported and reviewed the group's remit, which is to deal with earthing practices, protection for ESD and overvoltages, and labeling of DMX equipment regarding the uses of the alternate pins on the 5-pin XLR and the continuity of these pins. Willis said the task group has a report that is not quite ready. He intends to present it by January in time for distribution via mail.

6.2.3  DMX on Cat 5 Task Group (Higgins)

Dave Higgins reported that FTP (Foil-shielded Twisted Pair) is attractive because it gives a good ground in addition to the other conductors. However, FTP as expensive as the standard 9829 Belden cable, and also the connectors don't have any clear way to make use of the ground with FTP. UTP is about 10% of the cost of the regular cable.

Slew-rate limited transmitters help emissions, and reflections are virtually not an issue with slew rate limited transmitters, even without termination.

Higgins reported that, in the opinion of the test lab, we met FCC B level requirements with Cat 5.

Higgins said that a formal report will be given in January.

6.2.4  E1.11 general task group

Mitch Hefter reported that a total of 76 proposals had been received. The task group has addressed 71 of these, so five more are left to be done. The task group intends to have a report that Ruling can mail out with the minutes. This will be the basis of the first draft of E1.11, which should be done by January. The document will include information from the Cat 5 and physical layer task groups. Hefter hopes to be able to send the document to a first public review in March.

6.3  Report of 100MBPS Task Group (Davis & Bachman)

There was a discussion of the color coding on the connector pinouts. The 568B pinout seems to be the one that is winning in the market. The consensus was that a paragraph should be added about the 568B connector wiring that will give the color code.

There was also a discussion of the sentence in section 1.5.2 about local codes and supplying power through the same conduit that is carrying the Ethernet cable. The last sentence was changed from:

"Local codes may prohibit voltages greater than 42 VDC and this fact must be taken into account when specifying a new installation."

to:

"Local codes may limit voltages and currents, and this fact must be taken into account when specifying a new installation."

Tim Bachman moved that the document, with these additions and changes, be sent to the TSC with a recommendation that it be published. Bob Goddard seconded the motion. Unanimous by show of hands.


6.4  Report of ACN Task Group (Carlson)

Steve Carlson reported that the group had met informally at PLASA and in New Jersey.

The DHCP Dynamic Host Configuration Protocol (a means of obtaining IP addresses automatically) is being worked on. The group is looking for public domain implementations of the software. The class model document version 2 is done. Reliable multi-casting is the major hang-up now. The group is effectively stopped until the Internet Task Group develops IP6. IP6 will affect multi-casting by affecting the addressing system used.

Version 1.0 is expected to be released at LDI 1999. It will be released into public review at same time. The hardware platform is specified. The software test suite is being written now.

Steve Terry made a plea about time to market. It's long, and chaos in the market may ensue. What can the working group or task group do to cut the time to market?

Steve Carlson explained why the project is taking so long. A year was spent in breaking ACN into manageable parts.

Steve Terry asked if the task group is meeting its own milestones?

Steve Carlson said they are, mostly. Reliable multicasting is a hard nut to crack.

There was a discussion of allocating resources. Would more meetings help? Rick Leinen suggested ESTA hire a specialty consultant. Peter Willis suggested three months of a consultant's time would be useful. Jon Ide said that it would have helped to have had a consultant at the October meeting in New Jersey, because they were asking each other how things work in the business network world.

Steve Terry directed the task group to consider hiring a paid consultant, and to consider what a consultant might work on and what it might cost to have someone do this.

7    New Business

7.1    AES 24 report by John Huntington.

Huntington gave a report of a message he had received from Jeff Berryman giving the status of AES 24:

> The comment period for the last draft of AES24 Part 1 - Messages, Formats, and Basic Procedures, ended last summer. Substantial comments were received. A new draft has been prepared which incorporates all the comments in a way that satisfies all the key players. A few editorial changes will be made to the new draft by December 15.  It will then be resubmitted for republication by the AES, and a new comment period will ensue (3 months). No new substantial comments are anticipated, as all the key players' input has been incorporated into the new draft. After the comment period expires, the document is expected to be ratified as a standard.  This might happen at the spring AES, or it might happen by mail a month or two later. [Note: Contrary to what Berryman reported to Huntington, this part of the draft standard was posted on the AES website (http://www.aes.org/standards/comments/CALL-FOR-COMMENT-AES24-1-XXXX.html) for public review on November 4. It will be in review for three months, after which, if no substantive negative comments are received, minor editorial changes will be made.]

> A good draft of AES24 Part 2 - Datatypes, Constants, and Class Structure, now exists. This document is approximately one phase behind Part 1, but, with luck, it will be standardized with only one draft-for-comment cycle. In discussions of the draft at the Fall AES, the prime author said that approximately two weeks' work remained on the document before it could be submitted to the AES.

> The AES24 - Transport Requirements, document will be short, probably no more than five pages long, excluding boilerplate.

> Berryman also had told Huntington that the SC-10 committee members initially had not read the market forces for computerization of the pro audio industry accurately, but now has become more realistic. Three or four years ago they thought that all the manufacturers were poised in the starting blocks awaiting the standard, and that once the standard became available they'd all rush out and create interoperable products in an expeditious manner.  In line with this, they also assumed they were keen and patient enough to contribute substantial manpower to finishing the standard. The realities were (1) that most of them were (and still are) having lots of problems integrating software into their corporate cultures, and were therefore not in a position to create interoperable products effectively, and (2) once the price of creating interoperability began to be known (software development dollars), the level of support for making of the standard dropped off.

> Berryman told Huntington that the standard would be published soon, and will be taken up in due course by early adopters. Those operating on AES24-like proprietary standards (Harman and QSC) will probably be first in, unless new keen small companies beat them to it.  Initially, AES24 will be seen as an exchange standard, i.e. as a standard to bridge between proprietary standards.

There was some discussion of whether we should work together, and perhaps adopt some of AES24 for ACN. Carlson said the answer was still no because AES24 doesn't have many features we need.

Ted Paget moved, Mitch Hefter second that John Huntington be the ESTA representative on the AES24 SC10 working group, to be funded by ESTA to attend meetings, provided that funding is available. Philip Nye to be the representative at European meetings. Unanimous by show of hands.

Karl directed to get a copy of the draft AES24 standard and circulate to the group.
John Huntington has a link to the AES website from his home page,
http://ourworld.compuserve.com/homepages/jhuntington

8      Other business — EMC

Steve Carlson reported that EN 55103-1 and -2 come into force September 1, 1999.

Peter Willis said that the standards aren't so onerous when you really look at them. Philip Nye agreed.

Steve Carlson and Steve Terry asked if there was interest in the group for electrical standards monitoring. There was some interest expressed on behalf of the companies represented by the members of the working group, but these individuals would not be the members of a working group, if formed.

Robert Goddard expressed an interest in having an EN 55103-1, -2 seminar.

9      Schedule for future meetings

Steve Terry announced that the next meeting will be January 23, 1999, at 9:00 a.m. at the Dallas/Ft. Worth Marriott Hotel in Irving, Texas.

10     Adjournment

Mitch Hefter moved the meeting be adjourned. Tim Bachman seconded the motion. There were no objections. Steve Carlson declared the meeting adjourned at 11:27 a.m.

# Control Protocols Membership List at Close of 11/12/1998 Meeting

| Name | Company | Vote Stat. | Interest Cat. |
|------|---------|------------|---------------|
| Andre Broucke | ADB, Theatre and TV Lighting Division | O | P |
| Tony de Rijk | Amazing Controls! Inc. | P | P |
| Peter Willis | Andera Ltd. | P | P |
| Wayne David Howell | Artistic Licence (UK) Ltd. | P | P |
| Steve Friedlander | Auerbach & Associates, Inc. | O | U |
| Sierk Janszen | Avenger Showcontrol | O | P |
| J. B. Toby | Avolites Ltd. | O | P |
| Shahid Anwar | Avolites Ltd. | O | P |
| Richard Salzedo | Avolites Ltd. | O | P |
| Tobin Neis | Barbizon Companies | A | U |
| Tim Bachman | Barbizon Light | P | U |
| Ted Fregon | Bytecraft Pty. Ltd. | O | P |
| Murray Mason | Bytecraft Pty. Ltd. | O | P |
| Trevor Forrest | Celco | A | P |
| Marty Lazarus | Chicago Spotlight, Inc. | O | G |
| Tal Miron | Compulite R & D | O | P |
| Fred Lindauer | Compulite R&D | O | P |
| Mikael Fahl | Dataton AB | O | P |
| David Bertenshaw | David Bertenshaw | O | P |
| Doug Fleenor | Doug Fleenor Design | P | P |

| Name | Company | Vote Stat. | Interest Cat. |
|------|---------|------------|---------------|
| Gary Dove | Dove Systems | O | P |
| Ed Jones | Edwin Jones Co. | P | P |
| Bill Fehrmann | Electrol Engineering, Inc. | O | P |
| Bruce Lehnus | Electronic Theatre Controls, Inc. | O | P |
| Ed Prasser | Electronic Theatre Controls, Inc. | P | P |
| Bill Florac | Electronic Theatre Controls, Inc. | O | P |
| Dennis Varian | Electronic Theatre Controls, Inc. | A | P |
| Jon Ide | Electronic Theatre Controls, Inc. | A | P |
| Greg Heinzle | Electronic Theatre Controls, Inc. | A | P |
| Adam Bennette | Electronic Theatre Controls Ltd. | O | P |
| Paul Bennett | Electronics Diversified Inc. | O | P |
| Ed Arend | Electronics Diversified Inc. | P | P |
| Scott Rempel | Electronics Diversified Inc. | A | P |
| Tracy Underhill | Electronics Diversified Inc. (Colorado) | A | P |
| Philip Nye | Engineering Arts | O | G |
| Paul K. Ericson | Ericson Lighting Design | O | U |
| Nick Archdale | Flying Pig Systems Ltd. (UK) | A | P |

| Name | Company | Vote Stat. | Interest Cat. |
|------|---------|------------|---------------|
| Tom Thorne | Flying Pig Systems Ltd. (UK) | O | P |
| Nils Thorjussen | Flying Pig Systems Ltd. (US) | P | P |
| Robert Goddard | Goddard Design Co. | P | P |
| Dexter McNeil | Goddard Design Co. | A | P |
| Dave Higgins | Gray Interfaces | P | P |
| Michael (Sandy) Twose | Gray Interfaces | A | P |
| Lary Cotten | High End Systems | P | P |
| Scott Blair | High End Systems | A | P |
| Geoffrey O. Thompson | IEEE 802.3 / Bay Networks, Inc. | P | G |
| Larry Schoeneman | Interesting Products, Inc. | O | G |
| Edward Paget | Jones & Phillips Associates, Inc. | P | G |
| Philippe Jean | Kunst Macchina Production Company | A | P |
| Louis-Philippe Demers | Kunst Macchina Production Company | P | P |
| John Mehltretter | Lehigh Electric Products Co. | P | P |
| Mark T. Kraft | Lehigh Electric Products Co. | A | P |
| Andrew Sherar | Lightmoves PLC | O | P |
| Tracy Schwenk | Martin Professional Inc. | O | P |
| Gerard Cohen | Martin Professional Inc. | O | P |

| Name | Company | Vote Stat. | Interest Cat. |
|---|---|---|---|
| Rick Leinen | NSI Corporation | P | P |
| Tim Cox | PLASA | A | G |
| Tony Douglas-Beveridge | PLASA Standards Office | P | G |
| George Sabbi | PRG Lighting Division | A | U |
| Paul M. Kleissler | PRG/BASH Lighting Service | O | U |
| Steve Terry | PRG/Production Arts | P | U |
| John Huntington | PRG/Thoughtful Designs | A | U |
| George Kindler | PRG/Thoughtful Designsd | A | U |
| Bill Ellis | PRG/Vanco Lighting Services | O | U |
| Paul F. Mardon | Pulsar Ltd. | P | P |
| Steve Unwin | Pulsar Ltd. | A | P |
| Stephen J. Tyrell | Quantum Logic | O | P |
| Charlie Richmond | Richmond Sound Design Ltd. | O | U |
| Ken Bell | Richmond Sound Design Ltd. | O | U |
| Steve Carlson | Rosco/Entertainment Technology | P | P |
| Robert Barbagallo | Scéno Plus | P | G |
| Mick Martin | Showcad Control Systems | O | P |
| Milton Davis | Strand Lighting | A | P |
| Richard Lawrence | Strand Lighting Ltd. | P | P |
| Jerry Gorrell | Theatre Safety Programs | P | G |
| Thom Weaver | Thom Weaver | O | G |

| Name | Company | Vote Stat. | Interest Cat. |
|---|---|---|---|
| Colin Waters | TMB Associates | O | U |
| Brian Dowd | TMB Associates (NJ) | P | P |
| Achim Russ | Transtechnik GmbH | P | P |
| Hans Leiter | Transtechnik GmbH | A | P |
| Anders Ekvall | Transtechnik GmbH | O | P |
| Mitch Hefter | USITT (Rosco/Entertainment Technology) | P | P |
| Eckart Steffens | VPLT | P | G |
| Ken Wagner | Walt Disney Imagineering | O | U |
| Keny Whitright | Wybron, Inc. | A | P |
| John Sondericker III | Wybron, Inc. | P | P |
| Peter Brooks | Zero 88 Ltd. | P | P |
| Richard Thornton Brown | Zero 88 Ltd. | A | P |

Voting Status

P    Principal voting representative for a company or organization

A    Alternate voting representative for a company or organization

I    Individual representing no organization other than himself or herself

O    Observer; non-voting

Categories of interest

P    Producer (manufacturer) of control equipment

U    User of control equipment

G    General interest in control equipment