

Minutes
Control Protocols Working Group
Saturday, July 11, 1998
Clarion International Hotel
Rosemont, IL

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

Recording secretary: Karl G. Ruling, ESTA

Members in attendance: Tony de Rijk; Amazing Controls! Inc.; Principal
Peter Willis; Andera Ltd.; Principal (changed status from observer at this meeting)
Tobin Neis; Barbizon Companies; Alternate (joined at this meeting)
Tim Bachman; Barbizon Light; Principal
Trevor Forrest; Celco; Alternate
Doug Fleenor; Doug Fleenor Design; Principal
Greg Heinzle; Electronic Theatre Controls, Inc.; Alternate
Jon Ide; Electronic Theatre Controls, Inc.; Alternate
Tracy Underhill; Electronics Diversified Inc. (Colorado); Alternate
Robert Goddard; Goddard Design Co.; Principal
Dave Higgins; Gray Interfaces; Principal
Lary Cotten; High End Systems; Principal
Edward Paget; Jones & Phillips Associates, Inc.; Principal
Rick Leinen; NSI Corporation; Principal
Tony Douglas-Beveridge; PLASA Standards Office; Principal
George Sabbi; PRG Lighting Division; Alternate
Bill Ellis; PRG/Vanco Lighting Services; Observer (joined at this meeting)
Paul F. Mardon; Pulsar Ltd.; Principal
Steve Unwin; Pulsar Ltd.; Alternate
Mitch Hefter; Rosco/Entertainment Technology (USITT); Principal for USITT
Robert Barbagallo; ScEno Plus; Principal
Milton Davis; Strand Lighting; Alternate
Richard Lawrence; Strand Lighting Ltd.; Principal
Jerry Gorrell; Theatre Safety Programs; Principal
George Kindler; Thoughtful Designs (PRG); Alternate
Brian Dowd; TMB Associates (NJ); Principal
Eckart Steffens; VPLT; Principal

1 Opening Remarks

The meeting was called to order at 9:09 AM by Steve Terry

2 Attendance and membership

2.1 Introductions of those present

Those attending introduced themselves, in order proceeding counterclockwise around the table from the Chair.

2.2 Determination of quorum (11 needed)

There were 21 voting members (including the chairs, 19 without) present at the start of the meeting. Steve Terry announced, "Clearly we have a quorum."

2.3 Recognition of alternate voting members

The chairs noted that alternates may not vote if the principal is present, unless the principal defers to them. There is only one vote per company or organization.

2.4 Requirements for membership

Steve Terry reminded the group of the open membership policy and also of the attendance requirements.

2.5 Processing of new membership requests

Steve Terry noted that his company, Production Arts, is now part of PRG. He asked that he be accepted as the principal voting member for PRG with all other PRG representatives serving as alternates. Ted Paget so moved. Mitch Hefter seconded. Unanimous by show of hands.

The following people applied for membership as indicated:

Tobin Neis, Barbizon Companies, Alternate
Marty Lazarus, Chicago Spotlight, Observer
Michale Fael, Dataton, Observer
Bill Ellis, PRG/Vanco, Observer
Paul Kleissler, PRG/Bash Lighting Services, Observer
Peter Willis, Andera, move from observer to principal

All were accepted by acclamation

There were 22 voting members present as a result of Willis's change in status

3 Approval of the minutes from the previous meeting

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

4 Call for patents

Steve Carlson read the following statement:

"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."

Rick Leinen distributed some copies NSI/Colortran's US patent #5,668,537, "Theatrical Lighting Control Network," which issued September 16, 1997. Leinen reported that the company has not decided what to do with the patent yet, but said that he did not think that NSI/Colortran's plans for the patent will have an impact on the work of the group.

Steve Carlson read the following 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

Mitch Hefter asked that we add a discussion of how to handle alternate start codes to the agenda. Steve Carlson assigned it agenda item number 6.2.6 "Start code administration."

Ted Paget moved we accept the agenda with the addition of 6.2.6. Seconded by Robert Barbagallo. Unanimous by show of hands.

6 Old business

6.1 E1.3 comment resolutions redux (Fleenor et alia)

It was moved and seconded at the March 19, 1998 Control Protocols Working Group meeting to send the draft American National Standard E1.3, Entertainment Technology — Lighting Control Systems — 0 to 10V Analog Control Specification, to second public review. There were 25 votes in favor, but Paul Mardon had voted against the motion, and offered the following comments:

"In Clause 6.1.1 a table shows figures for Passive and Active Controllers. The Receiver does not know if it is being driven by an Active or Passive Controller. We therefore suggest having ONE table column, covering BOTH types of Controller. It is difficult to achieve 0.2V and VERY difficult to get right down to 0.1V. We therefore request that the Passive Controller 0% maximum limit of 0.2V be adopted to cover all transmitting devices (Controllers). Although we would prefer a higher limit of 0.3 or 0.4V.

"Also as the Receiver is allowed to have up to 30V at any input, should the maximum controller output at 100% be changed from 10.5V to 30V."

Ted Paget moved that the standard be amended so that the maximum value for a 0% output setting is 200mV. Jerry Gorrell seconded.

In the discussion Bob Goddard argued that good circuit design can achieve 100mV, and argued that this should be the maximum value for a 0% output setting. Trevor Forrest spoke against having two classes of controllers (active and passive) in the standard, and suggested that 0.2V is a good maximum level for 0%.

By show of hands: 13 in favor of the motion
 3 opposed
 6 abstain

Motion carried. The maximum voltage for a 0% setting shall be 200mV.

Bob Goddard moved that the second paragraph in 6.2.1, which read "Ötheir minimum output voltage such that it is an acceptable level (no ghosting) with an input signal of 0.2 volt," be changed to read "Ötheir minimum output voltage such that it is an acceptable level (no ghosting) with an input signal of 0.25 volt." Doug Fleenor seconded the motion. After some discussion, the motion was modified by Bob Goddard to set the level at 300mV (0.3V). This was seconded by Doug Fleenor.

By show of hands: 17 in favor
 0 opposed
 5 abstain

Motion carried.

Paul Mardon moved that the maximum output level of a transmitter be allowed to go to 30V so that 100% is any voltage in the range from 9.8V to 30V. Eckart Steffens seconded the motion. Mardon explained that on some control desks tapping a bump button puts more than 10V on the output, so that "full" on these desks is not one voltage, but different voltages above a certain level, depending on whether the full signal is from the slider or the bump button. Mardon argued that the standard should be written to accommodate these desks.

By show of hands: 1 in favor
Motion failed.

Mitch Hefter moved that E1.3, as amended at this meeting, go to a second public review. Ted Paget seconded the motion.

In favor:

Tony de Rijk; Amazing Controls! Inc.
Peter Willis; Andera Ltd.
Tim Bachman; Barbizon Light
Trevor Forrest; Celco
Doug Fleenor; Doug Fleenor Design
Greg Heinzle; Electronic Theatre Controls, Inc.
Tracy Underhill; Electronics Diversified Inc. (Colorado)
Robert Goddard; Goddard Design Co.
Dave Higgins; Gray Interfaces
Lary Cotten; High End Systems
Edward Paget; Jones & Phillips Associates, Inc.
Rick Leinen; NSI Corporation
Tony Douglas-Beveridge; PLASA Standards Office
Steve Terry; PRG/Production Arts
Steve Carlson; Rosco/Entertainment Technology
Robert Barbagallo; ScÉno Plus
Richard Lawrence; Strand Lighting Ltd.
Jerry Gorrell; Theatre Safety Programs
Brian Dowd; TMB Associates (NJ)
Mitch Hefter; USITT
Eckart Steffens; VPLT

Abstain:

Paul F. Mardon; Pulsar Ltd.

Motion passed by the required super-majority. Twenty-one affirmative votes from a total voting membership of 32 and a voting membership present of 22.

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

6.2.1 E1.11 Task Group

Mitch Hefter reported that the DMX task group had met. Steve Terry presented the following goals of the task group:

1. To produce a consensus document following proper standards procedure.
2. To make editorial updates to the DMX512 standard appropriate for 1998.
3. To add technical features while maintaining a balance with backward compatibility.
4. To identify comments for other standards or application documents
5. To deliver a draft document to the working group.

6.2.2 Recommended Practice for Protection Task Group Report (Willis)

Peter Willis reported that the group had met and was looking at a number of protection issues and related issues, including isolation, earthing [a.k.a. "grounding"], and termination. Steve Terry pointed out that this was now really the Physical Layer Task Group for DMX512/E1.11.

6.2.3 DMX PICS Project (Douglas-Beveridge and Ruling)

By consensus the DMX512/1990 PICS project was tabled indefinitely. The PICS for the current standard has been an interesting exercise that has pointed out the limitations of the standard. Few working products today would completely comply with the PICS because of the way the DMX512/1990 standard is written, therefore it was decided that the PICS should not be released because it would tend to confuse end-users and would not be helpful in enforcing compliance with the standard or with suppressing egregious violations of it. It was decided that a PICS for the new E1.11 standard will be developed concurrently with the standard.

6.2.4 DMX on Cat 5 Task Group (Higgins)

Dave Higgins presented the "DMX Over Category 5 Cable Investigation" (CP/981027) written by Michael A. (Sandy) Twose. The investigation looked at noise emissions and waveform degradation, but did not address the issue of noise pickup, and primarily looked at Cat 5 in comparison to the industry standard, Belden 9829. "It could be concluded from our measurements that Cat 5 UTP cable, when driven by a SRL [slew-rate limited] transmitter and properly terminated compares favorably with a shielded Belden cable and driven by a non-SRL transmitter and properly terminated."

Higgins said that the tests were done with all the unused pairs grounded. Steve Carlson said it would have been interesting to do the tests with one pair as conductors, another pair grounded, and the rest floating. Carlson asked Higgins to ask the lab to do some additional "electrical fast transient testing."

The consensus is that tests should be done with STP [shielded twisted-pair, also known as foiled twisted-pair (FTP)], too.

Dave Higgins said he'd spent about \$900 US in total. \$600 of that was in the testing fees. The rest was for wire.

6.2.5 DIN and DMX (Hefter)

Tony Douglas-Beveridge reported that he has been in touch with Debbie Way at BSI (Project Manager for BSI Committee CPL/34). From her he found out that at the March CENELEC Technical Board meeting the Germans were invited to submit two German (DIN) drafts on stage technology (Part 1 - Definitions requirements and testing and Part 2- Control signals) for circulation under the Vilamoura procedure. This action was in response to the UK request and it was hoped that the drafts would then be circulated so that all National Committees of CENELEC would be aware of the German activities and we would have the opportunity of taking part in any resulting standardization activities. DIN has recently submitted a paper for consideration to the Technical Board, and has stated the opinion that the two DIN drafts contain requirements (electrotechnical requirements) that are standardized elsewhere and have been selected and compiled for the specific application of theatre lighting systems. It is DIN's opinion that as the two standards do not establish new electrotechnical requirements, but only refer to existing standards, a Vilamoura notification is not applicable. The Germans are also of the opinion that there is no need for a European Standard in this field.

Debbie Way is briefing the UK Permanent Delegate to the CENELEC Technical Board (Mike Lockton of BSI) that (despite the German objections) the UK would still want to see a Vilamoura notification. The reasoning for this will be UK concern that the development of a German National Standard in this field has the potential to lead to different DMX-based systems existing within Europe and as such forming a barrier to trade. Debbie has asked Tony if the US would agree to the UK submitting a Vilamoura Procedure to adopt the US industry standard as a European Standard. In the event that

DIN wins the day at the next CENELEC Technical Board meeting in July, it might be a possible back-up line of defense.

Tony told Debbie that he is unhappy with the German reaction to the proposed Vilamoura notification and that he fully supports the briefing that she had given to Mike Lockton that the UK should continue to press for notification. He also told her that it was highly unlikely that CENELEC would be willing to adopt the existing USITT DMX512/1990 in its present form, but that this situation could change if ANSI approval is obtained following the current review of the standard. The best way of ensuring that any German/European DMX standard properly tracks the US version would be for the ANSI version to be subsequently adopted by the IEC. This would result in a CENELEC 'Standstill' being placed on any development of a nationally based DMX standard. This may be a long and tortuous road to follow, but without it (and in view of the apparent German unwillingness to co-operate in recognizing that there is a worldwide interest in DMX) we are likely to be left with a messy situation.

Tony said he was confused by the DIN position, which is that DMX has no internationally recognized standing, hence the need for a DIN standard, but that DMX also has an internationally recognized standing, so no circulation of the draft DIN standard is needed. DMX512 is apparently two contradictory things at once.

Mitch Hefter related his most recent communication with Ulrich Kunkel, in which Kunkel said that an American National Standard version of DMX would over-ride the DIN standard, but that the DIN standard need not be circulated.

Karl Ruling was directed by the working group chairs to proceed with getting the E1.11 project initiated as an ISO standard. This might hold off the adoption of the DIN standard in Europe.

6.2.6 Alternate Start Code Administration

Mitch Hefter reported that there are two pending applications for alternate start codes and asked what we should do about them.

Steve Terry suggested a moratorium on all new start codes. Peter Willis spoke against this proposal, stating that two is not a great number. The delay could be considerable, and would not be acceptable.

Ted Paget moved that DMX task group be authorized to act on the currently submitted requests, but that there be a moratorium on all other code requests. Peter Willis seconded the motion. Unanimous by show of hands.

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

Milton Davis presented a new version of the document (CP/98-1005r1) and explained what is in it. Davis said the glossary has more words than needed. The document also gives advice on power distribution for routers too. It does not discuss what routers are, etc, because that is beside the point of this document, which is a cabling document.

Steve Terry set an August 17 comment deadline for working group members to send comments to the task group.

Davis said they plan to add clear definitions of hub, router, bridge, and switch, and will make a note of low-voltage power regulations.

6.4 Report of ACN Task Group (Carlson)

Steve Carlson reported that the task group met twice in Long Beach. Philip Nye's document on class models was good and interesting, but not quite right, so he was asked to revise it. He has done so, and the task group would look at it later today. The task group will also look at device management protocol models.

Steve Terry as if the group had a target timeline. Carlson said it will be developed.

7 New Business

8 Other business

Peter Willis asked Tony Douglas-Beveridge to explain the breakfast meeting at PLASA. Tony explained that it is largely informational, and depends heavily on the American participation. The meeting will be September 8, Tuesday morning.

9 Schedule for future meetings

Steve Terry announced that the next meeting would be Thursday, November 12 at 9:00 AM at the Hyatt Hotel in Phoenix, AZ.

10 Adjournment

Mitch Hefter moved we adjourn. Tim Bachman seconded the motion. There were no objections. The meeting was adjourned at 12:20 PM.