

**Control Protocols Working Group**  
**Spring meeting minutes**  
Thursday, 13 April 2023  
Wyndham Anaheim, Anaheim, CA

**Chairpersons:** Milton Davis (Doug Fleenor Design) presiding; Michael Lay (Candela Controls) on-line

**Recording Secretaries:** Richard Nix and Karl Ruling; ESTA

**Members attending:**

Ali Alnajjar; Carallon Ltd.; O; MP  
Dennis Armijo; Insight Lighting; A; MP  
Paul Beasley; Walt Disney Company; P; U  
Robert Bell; Acuity Brands Inc.; A; MP  
Marcus Bengtsson; Original Syndicate; P; U  
Rene Berhorst; MA Lighting; P; MP  
Eric Bloom; Westview Productions; P; DR  
John David (Javid) Butler; HDR Consulting LLC; P; DE  
Milton Davis; Doug Fleenor Design, Inc.; P; MP  
Shepherd Dick; Image Engineering; wtg; CP  
Matt Didon; ON LX Limited; P; CP  
Tom Drozd; Encore Global; wtg; DR  
Thierry Dupont; Robert Juliat; P; MP  
Bill Ellis; Candela Controls, Inc.; P; DR  
Tracy S. Fitch; Electronic Theatre Controls, Inc.; P; MP  
Stijn Geysen; Luminex Lighting Control Equipment; P; MP  
Robert Goddard; Goddard Design Co.; P; MP  
Andrew Grant; Royal National Theatre; wtg; U  
Mitch Hefter; USITT; P; U  
Joe Izzard; Royal National Theatre; wtg; U  
John Valus Jr.; Lex TM3; O; CP  
Michael Karlsson; LumenRadio AB; P; MP  
Sam Kearney; Tait Towers Manufacturing LLC; A; MP  
Paul Kleissler; City Theatrical, Inc.; P; MP  
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U  
Hans Lau; I.A.T.S.E. Local 728; P; U  
Michael Lay; Candela Controls, Inc; A; DR  
Michael Lichter; Electronic Theatre Controls, Inc.; A; MP  
Kevin Linzey; Vectorworks, Inc; A; CP  
Kevin Loewen; Acuity Brands Inc.; P; MP  
Jim Love; Tait Towers Manufacturing LLC; A; MP  
Daniel Lupfer; Dr. Phillips Performing Arts Center; P; U  
Andreas Modschiedler; Adam Hall GmbH; O; MP  
Daniel Murfin; Tait Towers Manufacturing LLC; P; MP  
Maya Nigrosh; Sonos; P; MP  
Richard J. Nix; ESTA; exf; G  
Jason Potterf; Cisco; P; MP  
Max Schweiner; Electronic Theatre Controls, Inc.; wtg; MP  
Adam Seidman; City Theatrical, Inc.; wtg; MP  
Shawn Silverman; Lighting Infusion LLC; P; DE  
Richard Thompson; Electronic Theatre Controls, Inc; O; MP  
Peter Willis; Howard Eaton Lighting Ltd.; P; CP  
Vincent Worley; The Light Source Inc.; P; MP  
Liang Zhiguang; Guangzhou Haoyang Electronic Co., Ltd.; P; CP

**Visitor:** Erik Augustine; Cisco

## **1 Opening remarks**

Milton Davis called to order at 09:08 PDT. Welcomed people to NAMM and mentioned all “the good stuff” on the NAMM trade show floor. He noted the new AV system and asked people to bear with us as we work out how to use the system effectively.

## **2 Anti-trust and patent statements**

### **2.1 Reading of the anti-trust statement**

Milton Davis read the following statement aloud to the assembly:

*ESTA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all ESTA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will or will not do business with or the markets in which members will conduct business.*

*Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at an ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.*

Richard Nix displayed a copy of the pamphlet. It could be seen in the room and by people on-line. No concerns were raised.

### **2.2 Reading of the call for patents**

Milton Davis read the following statement aloud to the assembly:

*ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.*

*In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent, patent application, copyright, or other protected intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence.*

Nothing was revealed.

## **3 Attendance and Membership**

### **3.1 Requirements for membership**

Milton Davis read the following statement aloud to the assembly:

*Membership is open to all parties who are affected by the work of the group; membership in ESTA is not a requirement, but there is a \$100/person/year participation fee to help fund the costs of running the Technical Standards Program. Voting members are required to attend meetings and vote on letter ballots. Any principal member and alternate that both miss three consecutive meetings or that miss three consecutive letter ballots will have their membership status changed to observer. This action will be taken at the beginning of the first meeting after such inaction and will be recorded in the minutes of that meeting.*

Richard Nix noted that the renewal invoices had been sent out. If it had not been received, please let him know.

### **3.2 Introduction of attendees**

### **3.3 Determination of a quorum**

*There are currently 34 voting members. A quorum is 12, and a supermajority is 18. (With subsequent meeting actions this could increase by two votes, to 36, q=13, s=19)*

Milton Davis said that over 18 votes were present.

### 3.4 Processing of new membership and status change requests

#### 3.4.1 New applications

Andrew Sherar; Lightmoves Pty Ltd; O; DR  
 Andrew Grant; Royal National Theatre; O; U  
 Tom Drozd; Encore Global; O; DR  
 Robert Graham; Wenger Corporation; P; DR (not present)  
 Adam Seidman; City Theatrical, Inc; A; MP  
 Max Schweiner; Electronic Theatre Controls, Inc.; O; MP  
 Thomas Bretgeld; Bretgeld Engineering GmbH; O; CP  
 Joe Izzard; Royal National Theatre; P; U  
 Shepherd Dick; Image Engineering; P; CP  
 Marco Robles; I.A.T.S.E. Local 80; O; G

Mitch Hefter moved to accept the applications, but the absent applicant for Principal voting status accepted as observer. The motion was seconded. Maya Nigrosh noted that Thomas Bretgeld hadn't clicked the voting status button on his form. Richard Nix stated that he'd had an email conversation with Bretgold, and he was requesting Observer status, as shown in the agenda.

Approved with one abstention (Paul Beasley) and no objections.

#### 3.4.2 Changes to Observer status due to lack of attendance

The following voting members have missed the last two meetings and will be moved to observer status if this meeting is also missed:

*Insight Lighting – Dennis Armijo*

He was present, so no change.

#### 3.4.3 Consensus body

Delegate	Representing	Voting status	Int. cat.
Kevin Loewen	Acuity Brands Inc.	P	MP
Robert Bell	Acuity Brands Inc.	A	MP
Maurits van der Hoorn	Acuity Brands Inc.	A	MP
Bill Ellis	Candela Controls, Inc.	P	DR
Jim Ohrberg	Candela Controls, Inc.	A	DR
Michael Lay	Candela Controls, Inc.	A	DR
Andrew Mulkey	Candela Controls, Inc.	A	DR
Mark Primrose	CHAUVET & Sons Inc.	P	MP
Jim Bogdanowicz	CHAUVET & Sons Inc.	A	MP
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Adam Seidman	City Theatrical, Inc.	A	MP
Milton Davis	Doug Fleenor Design, Inc.	P	MP
Ian Campbell	Doug Fleenor Design, Inc.	A	MP
Daniel Lupfer	Dr. Phillips Performing Arts Center	P	U
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	P	U
Tracy Fitch	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Michael Lichter	Electronic Theatre Controls, Inc.	A	MP
Robert Goddard	Goddard Design Co.	P	MP
Liang Zhiguang	Guangzhou Haoyang Electronic Co., Ltd.	P	CP
John David (Javid) Butler	HDR Consulting LLC	P	DE

<b>Delegate</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Peter Willis	Howard Eaton Lighting Ltd.	P	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	A	U
Hans Lau	I.A.T.S.E. Local 728	P	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Matthew Ardine	I.A.T.S.E. Local 728	A	U
David Kane	I.A.T.S.E. Local 728	A	U
Shepherd Dick	Image Engineering	P	CP
Dennis Armijo	Insight Lighting	P	MP
Shawn Silverman	Lighting Infusion LLC	P	DE
Michael Karlsson	LumenRadio AB	P	MP
Stijn Geysen	Luminex Lighting Control Equipment	P	MP
Rene Berhorst	MA Lighting	P	MP
Leroy "Tripp" Oliver, III	Mainstage Theatrical Supply, Inc.	P	DR
Scott M. Blair	Megapixel	P	CP
Matt Didon	ON LX Limited	P	CP
Marcus Bengtsson	Original Synicate	P	U
Wayne Howell	Robe Lighting	P	MP
Thierry Dupont	Robert Juliat	P	MP
Joe Izzard	Royal National Theatre	P	U
Jon Hole	Signify	P	MP
Maya Nigrosh	Sonos	P	MP
Daniel Murfin	Tait Towers Manufacturing LLC	P	MP
Jim Love	Tait Towers Manufacturing LLC	A	MP
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Sam Kearney	Tait Towers Manufacturing LLC	A	MP
Vincent Worley	The Light Source Inc.	P	MP
Phong Ho	The Light Source Inc.	A	MP
Mitch Hefter	USITT	P	U
Jeremy Powell	Vectorworks, Inc	P	CP
Kevin Linzey	Vectorworks, Inc	A	CP
Larry Dew	W.A. Benjamin Electric Co.	P	DE
Paul Beasley	Walt Disney Company	P	U
Eric Bloom	Westview Productions	P	DR
	<b>Total votes possible</b>	<b>36</b>	
<b>Votes by interest category:</b>	<b>Custom market producer (CP):</b>	<b>6</b>	
	<b>Designer (DE):</b>	<b>3</b>	
	<b>Dealer or rental company (DR):</b>	<b>3</b>	
	<b>Mass market producer (MP):</b>	<b>16</b>	
	<b>User (U):</b>	<b>8</b>	
	<b>General interest (G):</b>	<b>0</b>	

**Voting status key:** P = Principal voter; A = Alternate voter;; I = Individual voter

#### **4 Approval of the minutes from the last meeting**

[See CPmin01-2023r1\_DRAFT.pdf]

Javid Butler moved to approve the draft minutes. The motion was seconded. The motion was approved without abstentions or objections.

## **5 Approval of agenda**

Javid Butler moved to approve the agenda. The motion was seconded. The motion was approved without abstentions or objections.

## **6 Old Business**

### **6.1 Standards, Guides & Recommended Practice Maintenance**

*This is a placeholder in the agenda, so we don't forget to maintain them. Documents prefaced with an asterisk (\*) are on the agenda elsewhere for reports or action.*

ANSI E1.3 – 2001 (R2021), Entertainment Technology - Lighting Control Systems - 0 to 10V Analog Control Specification & Application Guide For ANSI E1.3 – 2004 Lighting Control Systems 0 to 10V Analog Control Specifications. (Revision, reaffirmation or withdrawal by 20 May 2026)

\*ANSI E1.11 – 2008 (R2018), Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. (Revision, reaffirmation, or withdrawal by 31 May 2023)

ANSI E1.17 – 2015 (R2020) Entertainment Technology - Architecture for Control Networks (ACN) (Revision, reaffirmation, or withdrawal by 23 March 2025)

\*BSR E1.20 - 20xx, Remote Device Management over USITT DMX512. (In public review cycle)

ANSI E1.27-1 – 2006 (R2021), Entertainment Technology - Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products. (Revision, reaffirmation or withdrawal by 20 May 2026)

ANSI E1.27-2 – 2009 (R2019), Entertainment Technology - Recommended Practice for Permanently Installed Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products. (Revision, reaffirmation or withdrawal by 21 July 2024)

ANSI E1.30-1 – 2010 (R2021), EPI 23, Device Identification Subdevice. (Revision, reaffirmation or withdrawal by 20 May 2026)

ANSI E1.30-3 – 2009 (R2019), EPI 25, Time Reference in ACN Systems Using SNTP and NTP. (Revision, reaffirmation or withdrawal by 21 July 2024)

ANSI E1.30-4 – 2010 (R2021), EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. (Revision, reaffirmation, or withdrawal by 27 May 2026)

ANSI E1.30-10 – 2009 (R2019), EPI 32, Identification of Draft Device Description Language Modules. (Revision, reaffirmation or withdrawal by 21 July 2024)

ANSI E1.30-11 - 2019, EPI 33, Transport of root PDUs over TCP (Published on 25 June 2019. Revision, reaffirmation or withdrawal by 22 March 2024)

\*ANSI E1.31 - 2018, Lightweight streaming protocol for transport of DMX512 using ACN (Revision, reaffirmation, or withdrawal by 31 August 2023)

ANSI E1.33 – 2019, Transport of ANSI E1.20 (RDM) in an E1.31 environment (Revision, reaffirmation or withdrawal by 28 May 2024)

ANSI E1.37-1 – 2012 (R2022), Additional Message Sets for ANSI E1.20, Remote Device Management. (Revision, reaffirmation, or withdrawal by November 2027)

ANSI E1.37-2 – 2015 (R2021), Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages. (Revision, reaffirmation, or withdrawal by 24 June 2026)

\*BSR E1.37-4 – 201x, Remote Device Management over DMX512 Networks – File Transfer Control with Firmware Upload capabilities.(currently in comment resolution cycle from first public review in 2018)

\*BSR E1.37-5 – 20xx, General Purpose Messages for ANSI E1.20 RDM

ANSI E1.37-7 - 2019, Additional Message Sets for ANSI E1.20 (RDM) - Gateway and Splitter Configuration (Published on 05 July 2019. Revision, reaffirmation or withdrawal by 04 May 2024)

\*BSR E1.59, Object Transform Protocol

\*BSR E1.68, Recommended Practice to address DMX512 compliance and interoperability (now in comment resolution)

Application Guide for ANSI E1.3 - 2001, Lighting Control Systems 0 to 10V Analog Control Specification

Recommended Practice for Ethernet Cabling Systems in Entertainment Lighting Applications

Supplement to the Recommended Practice for Ethernet Cabling in Entertainment Lighting Applications

Withdrawn standards

E1.45 - 2013 (W2015), Unidirectional Transport of IEEE 802 data frames over ANSI E1.11 (DMX512A)

E1.30-7 - 2009 (W2016), EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts

## **6.2 BSR E1.20 – 201x, Remote Device Management over USITT DMX512**

*Progress report, Wayne Howell or Scott Blair. Reflector: [e1.20@esta.org](mailto:e1.20@esta.org)*

No report from Wayne Howell or Scott Blair. Michael Lay reported that Howell said he was reconstituting the task group. Dan Murfin reported that work on the document is going well.

## **6.3 BSR E1.37-4, Remote Device Management over DMX512 Networks – File Transfer Control with Firmware Upload capabilities**

*Progress report, Paul Beasley or Larry Dew. Reflector: [e137@esta.org](mailto:e137@esta.org), a general E1.37-x reflector.*

Paul Beasley reported useful input has come from the European Plugfest. He hopes to have a document for CPWG review at the next meeting.

## **6.4 BSR E1.37-5, General Purpose Messages for ANSI E1.20 RDM**

*Maya Nigrosh/Scott Blair. Reflector: [e137@esta.org](mailto:e137@esta.org), a general E1.37-x reflector.*

Maya Nigrosh reported that she'd done a draft of comment resolutions. She will call for a meeting of the task group to review her draft. She briefly summarized the nature of the comments.

## **6.5 BSR E1.37-8, Additional Message Sets for ANSI E1.20 (RDM) – IPv6 & Improved IPv4 Configuration Messages.**

*Scott Blair/Dan Murfin. Reflector: [e137-8@esta.org](mailto:e137-8@esta.org)*

Dan Murfin reported that Scott Blair needs to turn the document over to him so Murfin can make the changes the task group had agreed on.

## **6.6 BSR E1.68 Recommended Practice to address DMX512 compliance and interoperability**

*Javid Butler/Wayne Howell. Reflector: [ProtocolsCompliance@esta.org](mailto:ProtocolsCompliance@esta.org).*

Javid Butler reported work on this document has suggested changes needed in E1.11. These are minor changes to the text but substantive.

## **6.7 BSR E1.63 Network Advertisement of Entertainment Protocols**

*Jason Potterf/Kevin Loewen. Reflector: [NAEP@esta.org](mailto:NAEP@esta.org)*

Jason Potterf reported they are working on a first draft. What it should say is pretty much decided, but the mass of words needs to be formatted.

### **6.8 BSR E1.73, Next Generation Entertainment Control Model: Uniform Device Representation (UDR)**

Dan Murfin/Sam Kearney Reflector: [NextGenLibrary@esta.org](mailto:NextGenLibrary@esta.org)

Dan Murfin reported that a document for consideration for public review should be ready for a vote this summer.

Sam Kearney said that progress on the “Fixture Builder” has been slow. Milton Davis asked what device resources would be needed to run the app. Kearney said it's a web-app, so the requirements for devices accessing the app are low.

### **6.9 Next Gen Study Group (Overall) and Next Gen Transport study group**

Jason Potterf/Maya Nigrosh. Reflectors: [nextgencontrolprotocol@esta.org](mailto:nextgencontrolprotocol@esta.org) and [NextGenTransport@esta.org](mailto:NextGenTransport@esta.org)

Jason Potterf said that the task group has dug far enough to hit bedrock. They are ready to white-board ideas for what existing transports can be used that meet our needs. Making progress!

There were reports of people asking when products will hit the market, with their expectations being perhaps by this summer. The market doesn't understand the work needed to produce a standard.

### **6.10 BSR E1.77, Secure Authentication for ESTA Streaming Protocols**

Kevin Loewen/Paul Beasley. Reflector: [CPWG\\_Secure@esta.org](mailto:CPWG_Secure@esta.org)

Kevin Loewen reported little progress, but a document to be sent to the reflector in a few weeks. There should be something for the entire CPWG to look at in July.

### **6.11 BSR E1.59 - 2021, Object Transform Protocol**

Dan Murfin and Maya Nigrosh. Reflector: [e159@esta.org](mailto:e159@esta.org)

Dan Murfin reported that they have some comments from within the task group to add to the document. They have been trying to get the SMPTE groups that have expressed interest in the project to actually submit their comments in a form in which they can be considered and addressed.

### **6.12 Task group leader coordination**

*Scott Blair is the official scheduling liaison for meetings between the CPWG task groups and meeting schedulers. Laura Hoepker ([laura.hoepker@esta.org](mailto:laura.hoepker@esta.org)) handles face-to-face meetings when we meet at an ESTA event. Richard Nix handles meetings scheduled using ESTA's WebEx account—**only** ESTA's WebEx account. Task groups are free to use their own WebEx accounts, Zoom, Teams, Meet, or something else.*

*BSR E1.20: Scott Blair and Wayne Howell*

*E1.37-x: Video Walls Scott Blair*

*BSR E1.37-4: Paul Beasley and Larry Dew*

*BSR E1.37-5: Maya Nigrosh/Scott Blair*

*BSR E1.37-8 Scott Blair and Dan Murfin*

*BSR E1.59: Dan Murfin and Maya Nigrosh*

*E1.61 NAEP: Jason Potterf and Kevin Loewen*

*E1.68: Javid Butler and Wayne Howell*

*E1.73: Dan Murfin and Sam Kearney*

*Next Gen Study Group: Jason Potterf and Maya Nigrosh*

*Plugfest Marketing Task Group: Michael Lay*

*NAMM Education Task Group: Milton Davis*

*Next Gen Transport study group: Maya Nigrosh and Jason Potterf*

*Protocol Security study group: Kevin Loewen and Paul Beasley*

*GitHub study group: Jason Potterf*

Milton Davis noted that task groups can meet however they wish via whatever media they want.

## **7 New business**

**7.1 ANSI E1.11 – 2008 (R2018), Entertainment Technology - USITT DMX512-A,** (Revision, reaffirmation, or withdrawal by 31 May 2023)

*Action must be taken at this meeting.*

Javid Butler moved that we revise the document. The motion was seconded by discussion. There was concern about unhelpful suggestions from the public. Michael Lay said that we can simply reject unhelpful comments. We don't need to accept comments that break backward compatibility or muddy the standard. Butler emphasized that the revision he has in mind would be to correct problems that require impossible tests in E1.68. The motion carried with no abstentions or objections.

Michael Lay and Milton Davis appointed Mitch Hefter to lead the revision project. Hefter asked that the task group be the members of the E1.68 task group. Davis agreed. Shawn Silverman asked to be part of the task group.

**7.2 ANSI E1.31 - 2018, Lightweight streaming protocol for transport of DMX512 using ACN,** (Revision, reaffirmation, or withdrawal by 31 August 2023)

*Maya Nigrosh (leader), Richard Thompson, Shawn Silverman, Sam Kearney, Paul Beasley (Co-leader), Kevin Loewen. The working group has two meetings to decide which action to take.*

Dan Murfin was appointed to the task group.

Maya Nigrosh said that the task group will have a recommendation for the working group at the meeting in July.

**7.3 New project requests – three of them to split BSR E1.73 into parts**

*A request to split the E1.73 project into a range of parent/child documents. E1.73 would become the E1.73-1 "parent" document and we would add the following "child" documents:*

*E1.73-2 Core Definitions for E1.73-1 Next Generation Entertainment Control Model: Uniform Device Representation (UDR)*

*E1.73-3 Intensity/Color Definitions for E1.73-1 Next Generation Entertainment Control Model: Uniform Device Representation (UDR)*

*E1.73-4 Motion Definitions for E1.73-1 Next Generation Entertainment Control Model: Uniform Device Representation (UDR)*

Michael Lay said that the library document needs to be split into more easily digestible parts. Sam Kearney reviewed how the draft standard is structured now and how it probably will develop. Dan Murfin expanded on Kearney's description of the modular nature of the standard. Partitioning it will make that work easier.

Javid Butler moved to accept the proposals to split E1.73 into parts. The motion was seconded. The motion was approved without objection or abstention.

**7.4 Email reflectors**

*From the draft January minutes:*

*Maya Nigrosh will investigate automated listservs or other staff labor-saving alternatives.*

Nigrosh reported that she has a solution that would allow ESTA to stop hosting email. This would require some custom software she would write. She's willing to do this. Milton Davis asked Richard Nix if ESTA is able to continue the reflectors for now. Nix said Yes.

**7.5 ANSI E1.27-2 – 2009 (R2019), Recommended Practice for Permanently Installed Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products**

*[See E1.27-2 and shield email From Robert Bell.pdf]*

*See the email from Robert Bell, with his recommendation that the CPWG needs to consider revising this standard.*

Robert Bell reported that he has problems with people asking what to do with the shield on STP cable. The E1.27-2 document says STP is preferred, but earthing the shield at the transmitter only is difficult with daisy-chaining from fixture to fixture. That daisy-chaining causes ground loops.



Javid Butler reported that the shielding issue was a compromise to address concerns of members working in the European market. Shielding really doesn't do much. Robert Bell suggested we simply delete 4.1.1 in the standard.

There was discussion of revising E1.27-2 now or when we next need to take action on this. The consensus was that revising this when it comes up for revision on the calendar would be soon enough.

Robert Bell says that Acuity has a document on its website saying NOT to connect the shield.

## **8 Other business and announcements**

### **8.1 National Electrical Code (NEC) update**

*Jason Potterf, Mitch Hefter, or Bill Ellis to report.*

Mitch Hefter reminded people that public input for updates to the 2023 edition for 2026 are being accepted through September 07, 2023 at 5:00pm EDT. [nfpa.org/70](https://nfpa.org/70)

Jason Potterf reported that the NEC is being restructured, which will bother people who like the current structure, which they have practically memorized. Jason Potterf said Panel 18 is currently not active.

### **8.2 Illuminating Engineering Society (IES) update**

*Bill Ellis or Mitch Hefter to report.*

Bill Ellis reported there will be an on-line public session on digital control protocols for lighting on June 8. It's focused on DALI so far, but he and Hefter have been pointing out that DMX512 is a digital protocol, too.

### **8.3 Institute of Electrical and Electronics Engineers (IEEE) update**

*Jason Potterf to report.*

Potterf reported that IEEE is back to hybrid in-person and virtual meetings. He and Steve Carlson have been offering advice drawing from our experience with hybrid meetings.

Potterf described work that might impact our industry. POE is mature, but there is work to transmit more power. Daisy-chaining POE Ethernet project is progressing, which would work with our network topographies, but regular DMX512 cable probably won't work. Distances of tens of meters should be possible with scores of multi-drop nodes. Progressing slowly. IEEE 802.3da is the alphanumeric designation for this 10 Mb/s single-pair multidrop segments project.

Potterf mentioned projects to transmit DALI over IP, which elicited further discussion from meeting attendees

### **8.4 National Electrical Manufacturer Association (NEMA) update about C137.6**

Mitch Hefter suggested this be dropped from the agenda. He had no news.

### **8.5 Society of Motion Picture and Television Engineers (SMPTE) *Rapid Industry Solutions***

*Scott Blair or Marcus Bengtsson to report.*

Marcus Bengtsson reported that camera image metadata has been defined, but there is further work on camera tracking, which fits right into our E1.59 project.

Bengtsson reported that at NAB on Monday 17 April there will be an afternoon panel to discuss standardization in virtual production. He'll be on the panel. It will push standardization as opposed to proprietary solutions.

## **8.6 Plugfests**

### **8.6.1 Europe**

Peter Willis reported 35 attendees, and a well-attended event. Dan Murfin affirmed this. There were several good presentations on ongoing standards.

### **8.6.2 USA**

Milton Davis reported that the Plugfest is scheduled to take place from October 5 to October 8, 2023 at the Marriot Dallas/Fort Worth in Westlake, Texas. You can book your attendance by sending an email to [plugfest@esta.org](mailto:plugfest@esta.org). Michael Lay encouraged people to attend.

### **8.7 NAMM Presentations**

Milton Davis cited the presentations that CPWG members will be offering.

### **8.8 Above & Beyond Awards**

Milton Davis reminded attendees that information on the Above & Beyond Awards is available at [http://tsp.esta.org/tsp/news/award\\_recipients.html](http://tsp.esta.org/tsp/news/award_recipients.html).

### **9 Schedule for future meetings**

Milton Davis the full meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>. Summer meetings will be held in Westlake, TX during the week of 17 July, then returning to Westlake again during the week of 2 October, for the fall meetings. The October meeting will include the Plugfest.

### **10 Adjournment**

The meeting was adjourned by Milton Davis at 10:48 PDT (13:48 EDT).

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Cameron Affleck	Cameron Affleck	O	U
Christian Allabauer	Christian Allabauer	O	G
Ali Alnajjar	Carallon Ltd.	O	MP
Matthew Ardine	I.A.T.S.E. Local 728	A	U
Dennis Armijo	Insight Lighting	A	MP
Benjamin Eagen Arrigo	Benjamin Eagen Arrigo	O	U
Nick Ballhorn-Wagner	Electronic Theatre Controls, Inc.	O	MP
Robert Barbagallo	Solotech Inc.	O	U
Paul Beasley	Walt Disney Company	P	U
Robert Bell	Acuity Brands Inc.	A	MP
Marcus Bengtsson	Original Syndicate	P	U
Justin Bennett	University of the Incarnate Word	O	U
Rene Berhorst	MA Lighting	P	MP
Scott M. Blair	Megapixel	P	CP
Eric Bloom	Westview Productions	P	DR
Jim Bogdanowicz	CHAUVET & Sons Inc.	A	MP
Thomas Bretgeld	Bretgeld Engineering GmbH	O	CP
Justyn Butler	JBOTS	O	CP
John David (Javid) Butler	HDR Consulting LLC	P	DE
Jean-Francois Canuel	A.C. Lighting Ltd.	O	CP
Steve Carlson	High Speed Design, Inc.	O	MP
Yongzhi Chen	Guangzhou Haoyang Electronic Co., Ltd.	O	CP
Anthony Chiappone	Chauvet Lighting	O	MP
Martin Chisnall	Martin Chisnall	O	U

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Jon Chuchla	Audio Visual Systems, Inc.	O	G
Gareth Conner	Creative Conners, Inc.	O	MP
Chris Conti	PRG	O	DR
Milton Davis	Doug Fleenor Design, Inc.	P	MP
Jeremy Day	Lumenpulse Group	O	MP
Al DeMayo	LiteGear, Inc.	O	MP
Steve Denim	Electronic Theatre Controls, Inc.	O	MP
Larry Dew	W.A. Benjamin Electric Co.	P	DE
Matthew Dews	Matthew Dews	O	MP
Shepherd Dick	Image Engineering	P	CP
Matt Didon	ON LX Limited	P	CP
Rich Dionne	Purdue University	O	DE
Gary Douglas	Phospec Industries, Inc.	O	MP
Tucker Downs	ROE Visual USA	O	MP
Tom Drozd	Encore Global	O	DR
Hamish Dumbreck	James Embedded Systems Engineering	O	MP
Thierry Dupont	Robert Juliat	P	MP
James Eade	ABTT	O	G
Bill Ellis	Candela Controls, Inc.	P	DR
Paul K. Ericson	Stantec	O	DE
Tracy S. Fitch	Electronic Theatre Controls, Inc.	P	MP
Trevor Forrest	Helvar Lighting Control	O	MP
Harrison Freni	Infinitus Lux, LLC	O	U
Mike Garl	Mike Garl Consulting LLC	exf	

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Stijn Geysen	Luminex Lighting Control Equipment	P	MP
Robert Goddard	Goddard Design Co.	P	MP
Nicolas Goerg	Rosco Laboratories	O	CP
David Gooch	Chauvet Lighting	O	MP
Sean Goossen	LiteGear, Inc.	O	MP
Jerry Gorrell	Theatre Safety Programs	O	G
Erin Grabe	ESTA	exf	G
Robert Graham	Wenger Corporation	O	DR
Andrew Grant	Royal National Theatre	O	U
Matt Halberstadt	Electronic Theatre Controls, Inc	O	MP
Sean Harding	Port Lighting Systems	O	G
Nick Harper	Nick Harper	O	G
Robert Haycock	Robert Haycock	O	U
Mitch Hefter	USITT	P	U
Phong Ho	The Light Source	A	MP
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Jon Hole	Signify	P	MP
Maurits van der Hoorn	Acuity Brands Inc.	A	MP
Wayne David Howell	Robe Lighting s.r.o.	P	MP
John Huntington	I.A.T.S.E. Local 1	A	U
Leroy "Tripp" Oliver, III	Mainstage Theatrical Supply, Inc.	P	DR
Joe Izzard	Royal National Theatre	P	U
Quinten James	QtoCue Lighting Design	O	U
Eric Johnson	Eric Johnson	O	G

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Rob Johnston	Interactive Technologies, Inc.	O	MP
John Valus Jr.	Lex TM3	O	CP
David Kane	I.A.T.S.E. Local 728	A	U
Michael Karlsson	LumenRadio AB	P	MP
Sam Kearney	Tait Towers Manufacturing LLC	A	MP
Jonathan Kemble	Jonathan Kemble	O	G
Chris Kennedy	Chauvet Lighting	O	MP
Bill Kirby	Crescit Software, Inc.	O	G
Paul Kleissler	City Theatrical, Inc.	P	MP
Lucas Korytkowski	Insight Lighting	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Christian Krueger	Blizzard Lighting LLC	O	MP
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	P	U
Jason Kyle	JPK Systems Ltd.	O	MP
Hans Lau	I.A.T.S.E. Local 728	P	U
Michael Lay	Candela Controls, Inc	A	DR
Hans Leiter	Electronic Theatre Controls, Inc.	O	MP
Jon Lenard	Applied Electronics	O	MP
Michael Lichter	Electronic Theatre Controls, Inc.	A	MP
Kevin Linzey	Vectorworks, Inc	A	CP
Kevin Loewen	Acuity Brands Inc.	P	MP
Jim Love	Tait Towers Manufacturing LLC	A	MP
Rob Love	Insight Lighting	O	MP
Daniel Lupfer	Dr. Phillips Performing Arts Center	P	U

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Vangelis Manolis	AtlaBase Ltd.	O	CP
Kevin Matz	Company 235, LLC	O	U
David McCulloch	David McCulloch	O	U
Bill McIntyre	Show Distribution Group, Inc.	O	CP
John Mehlretter	Lehigh Electric Products Co.	O	MP
Andreas Modschiedler	Adam Hall GmbH	O	MP
Andrew Mulkey	Candela Controls, Inc.	A	DR
Daniel Murfin	Tait Towers Manufacturing LLC	P	MP
John Musarra	John Musarra	O	U
Maya Nigrosh	Sonos	P	MP
Richard J. Nix	ESTA	exf	G
Jim Ohrberg	Candela Controls, Inc.	A	DR
Jaxon Patterson	Insight Lighting	O	MP
Soren Sterdorff Peglau	Brother, Brother and Sons	O	MP
Jason Potterf	Cisco	P	MP
Jeremy Powell	Vectorworks, Inc	P	CP
Mark Primrose	CHAUVET & Sons Inc.	P	MP
Gary Pritchard	LSC Control Systems Pty Ltd	O	MP
Charles Reese	Production Resource Group	O	DR
Jake Rhodes	Altman Lighting	O	MP
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Karl G. Ruling	ESTA	exf	G
Yngve Sandboe	Sand Network Systems, Inc.	O	MP
Jessica Sanders	Villain Lighting LLC	O	U

Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Nicolai Gubi Schmidt	Nicolai Gubi Schmidt	O	U
Max Schweiner	Electronic Theatre Controls, Inc.	O	MP
Adam Seidman	City Theatrical, Inc.	A	MP
Ford Sellers	Chauvet Lighting	O	MP
Andrew Sherar	Lightmoves Pty Ltd	O	DR
Shawn Silverman	Lighting Infusion LLC	P	DE
Sam Smallman	Artificers	O	CP
Tom Steer	Electronic Theatre Controls, Inc	O	MP
Bart Swinnen	Luminex Lighting Control Equipment	O	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Richard Thompson	Electronic Theatre Controls, Inc	O	MP
Christopher B. Tilton	About the Stage, LLC	O	DE
Robert Timmerman	Signify	O	MP
Scott Tusing	Angry Otter Lighting, LLC	O	U
Tracy Underhill	Triple C Lighting & Controls	O	G
Carlo Venturati	Clay Paky S.P.A.	O	MP
Will Wagner	Carallon Ltd.	O	MP
Colin Waters	TMB	O	DR
Ralph Weber	ENDL Texas	O	G
Peter Willis	Howard Eaton Lighting Ltd.	P	CP
Loren Wilton	Showman Systems	O	CP
Sebastian Wissmann	Inoage GmbH	O	MP
Vincent Worley	The Light Source Inc.	P	MP
David Yellin	Sumolight GmbH	O	MP



Control Protocols Working Group members as of 17 April 2023

Delegate	Representing	Voting status	Int. cat.
Jeong Sik Yoo	Ghost LX	O	DE
Liang Zhiguang	Guangzhou Haoyang Electronic Co., Ltd.	P	CP

**Voting Status key:** P = Principal voter, A = Alternate voter, I = Individual voter; O = Observer (non-voter); exf = ex officio, non-voting

**Interest Category key:** MP = Mass-market producer, CP = Custom-market producer, DR= Dealer or rental company, U = User, G = General interest, DE = Designer