

**Control Protocols Working Group  
Minutes**

Tuesday, 17 Jan 2023

11:00 – 15:00 EST

via WebEx

**Chairpersons:**

Milton Davis; Doug Fleenor Design, Inc; P; MP (presiding)

Michael Lay; Candela Controls, Inc; A; DR

**Recording secretaries:**

Karl Ruling and Richard Nix (ESTA)

**Attendees:**

Bill Ellis; Candela Controls, Inc.; P; DR

John Huntington; I.A.T.S.E. Local 1; A; U

Edwin S. Kramer; I.A.T.S.E. Local 1; P; U

Peter Willis; Howard Eaton Lighting Ltd.; P; CP

Steve Terry; Electronic Theatre Controls, Inc.; A; MP

Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH; P; U

Michael Lichter; Electronic Theatre Controls, Inc.; A; MP

Paul Kleissler; City Theatrical, Inc.; P; MP

Michael Karlsson; LumenRadio AB; P; MP

Kevin Loewen; Acuity Brands Inc.; P; MP

Mitch Hefter; USITT; P; U

Jason Potterf; Cisco; P; MP

Paul Beasley; Walt Disney Company; P; U

Larry Dew; W.A. Benjamin Electric Co.; P; DE

Maya Nigrosh; Sonos; P; MP

Robert Haycock; Robert Haycock; O; U

Chris Kennedy; Chauvet Lighting; O; MP

Scott M. Blair; Megapixel; P; CP

Mark Primrose; CHAUVET & Sons Inc.; P; MP

Leroy "Tripp" Oliver, III; Mainstage Theatrical Supply, Inc.; P; DR

Shawn Silverman; Lighting Infusion LLC; P; DE

Vangelis Manolis; AtlaBase Ltd.; O; CP

Richard Thompson; Electronic Theatre Controls, Inc; O; MP

Matt Didon; ON LX Limited; P; CP

Rene Berhorst; MA Lighting; P; MP

Hans Lau; I.A.T.S.E. Local 728; P; U

Jon Hole; Signify; P; MP

Jeremy Powell; Vectorworks, Inc; P; CP

Stijn Geysen; Luminex Lighting Control Equipment; P; MP

John David (Javid) Butler; HDR Consulting LLC; P; DE

Quinten James; QtoCue Lighting Design; O; U

Thierry Dupont; Robert Juliat; P; MP

Sam Kearney; Tait Towers Manufacturing LLC; A; MP

Daniel Murfin; Tait Towers Manufacturing LLC; P; MP

Marcus Bengtsson; Original Syndicate; P; U  
Andreas Modschiedler; Adam Hall GmbH; O; MP  
Scott Tusing; Angry Otter Lighting, LLC; O; U  
Tracy S. Fitch; Electronic Theatre Controls, Inc.; P; MP  
Kevin Linzey; Vectorworks, Inc; A; CP  
Daniel Lupfer; Dr. Phillips Performing Arts Center; P; U  
Vincent Worley; The Light Source Inc.; P; MP  
Phong Ho; The Light Source; A; MP  
Liang Zhiguang; Guangzhou Haoyang Electronic Co., Ltd; P; CP

## **1 Opening remarks**

Milton Davis called the meeting to order at 11:03. He reminded people to stay muted, except when speaking, to avoid unnecessary noise.

## **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.*

### **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.*

### **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.*

#### **3.2 Introduction of attendees**

Michael Lay read the list of attendees, who introduced themselves as their names were called.

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

Milton Davis announced that a quorum is present.

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

##### **3.4.1 New applications**

The following applications had been received:

*Wayne David Howell; Artistic Licence Engineering Ltd. representing Robe Lighting s.r.o.; Principal; MP*  
*Vincent Worley; The Light Source Inc.; Principal; MP*  
*Phong Ho; The Light Source Inc.; Alternate; MP*  
*Tracy Fitch; [status change request to P]*  
*Marcus Bengtsson; [status change request to P]*

Steve Terry moved to accept all applications and change requests as submitted. The motion was seconded and carried without objection or abstention.

##### **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:*

*John Valus Jr.; Lex TM3; CP*  
*Leroy "Tripp" Oliver, III; Mainstage Theatrical Supply, Inc.; DR*  
*Matt Didon; ON LX Limited; CP*  
*Gary Douglas; Phospec Industries, Inc.; MP*  
*Bill McIntyre; Show Distribution Group, Inc.; CP*  
*Steve Terry and Michael Lichter; Electronic Theatre Controls, Inc.; MP*

John Valus, Gary Douglas, and Bill McIntyre were not present, so their status was changed to Observer.

### 3.4.3 Draft Consensus body

*The consensus voting body after all meeting actions is as follows:*

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
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
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
Dennis Armijo	Insight Lighting	A	MP
Shawn Silverman	Lighting Infusion LLC	P	DE
Michael Karlsson	LumenRadio AB	P	MP

<b>Delegate</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
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
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>34</b>	
<b>Votes by interest category:</b>	<b>Custom market producer (CP):</b>	<b>5</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>7</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 CPmin09-2022\_DRAFT.pdf*

Mitch Hefter moved to approve the minutes. The motion was seconded, and carried with no objections and two abstentions (Paul Beasley, Kevin Leowen)

## 5 Approval of agenda

Scott Blair moved to approve the agenda. The motion was seconded, and carried without objection and one abstention (Paul Beasley).

## 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 (R20121), 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 (R2016), 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**

*See the fourth review comment summary, E1-20-201x\_4thRevwSummary.pdf.*

Wayne Howell reported, they have gone through all of the comments, and says that many of them are rehashes of prior comments. He will compile a document that illustrates the history of the development, showing how these items were previously addressed. He thinks he will be able to do so quickly, and expects to have a revision ready for working group consideration soon.

Milton Davis thanked Wayne Howell for his work.

## **6.3 ANSI E1.37-1 – 2012 (R2022), Additional Message Sets for ANSI E1.20, Remote Device Management.**

*It's been approved as an ANS by ANSI.*

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

*Progress report, Paul Beasley or Larry Dew.*

Larry Dew reported, they have been meeting regularly, and are at the point where they can definitively state they are abandoning the one-to-many concept, and limit file transfer only to firmware updates, with possible future accommodation of other file types. He expects a draft might be available around NAMM time.

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

*Maya Nigrosh/Scott Blair. From the draft June meeting minutes:*

*See the sixth review comment summary, Summary\_E1.37-5\_6thReview.pdf.*

Scott Blair reported, they received 26 comments from two commenters, most of them came from Peter Newman, and many of those were editorial in nature. He saw no comment he thought would effect any substantive change at this time, so expects to be able to finish it without another public review. He thanked Maya for doing most of the heavy lifting during this round. Milton Davis thanked Scott Blair for his work, too.

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

*Scott Blair/Dan Murfin.*

*Progress report.*

Scott Blair reported, no update from his end but he owes an assignment to Dan Murfin.

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

*Javid Butler/Wayne Howell.*

*Public review resolution progress report.*

Javid Butler reported, they had a good meeting in Westlake, but have not been able to move



forward since. He is now able to dedicate more time.

Steve Terry asked what would happen if this draft potentially conflicts with ANSI E1.11. Mike Lay explained that the task group is expected to bring back a list of possible conflicts to the working group for consideration, then make a determination of what to do with either document.

Wayne Howell added that the intent is to always refer to specific versions of the DMX document, so the possibility of becoming out-of-sync is quite low.

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

*Jason Potterf/Kevin Loewen.*

*Progress report.*

Jason Potterf reported, they have made no progress due to a shortage of help in writing the document, but they have been soliciting for volunteers.

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

*Dan Murfin/Sam Kearney*

*Progress report.*

Dan Murfin reported they had two very productive meeting this past fall, and they continue to make very good progress, with only about five items left on their to-do list. They are building some libraries, too. They plan to have a document ready for the summer meeting.

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

*Jason Potterf/Maya Nigrosh.*

*Progress report.*

Jason Potterf reported, they have been following along with the E1.73 task group, understanding the types of data they need to address. They need to know what needs to be transported before the appropriate transport mechanism is chosen. They still don't know which protocol they will use, because of the low-latency requirements.

Milton Davis says he has been getting inquiries about when the market can expect to see the new protocol.

Jason added that their first goals include supplementing existing protocols. He's certain they will need a website-style of addresses for all of the protocols.

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

*Kevin Loewen/Paul Beasley.*

*Progress report.*

Kevin Loewen said there has been no progress, but his workload is changing so it might be moving forward soon.

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

*Dan Murfin and Maya Nigrosh.*

*See public review summary, E1-59\_202x\_PubRevwSummary.pdf. No comments were received.*

Maya Nigrosh reported that some useful comments were received outside of the public review, but they are going to address them as public review comments, which will result in a revised document that will require another public review.

Karl Ruling gave a short speech about the importance of Working Group discussions with a goal of minimizing public reviews, which creates work for ESTA staff, and ANSI staff.

## **6.13 Task group leader coordination**

*Scott Blair is the official scheduling liaison for meetings between the CPWG task groups and meeting schedulers. Laura Hoepker 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*

There was discussion about the meeting times for NAMM, and the deadlines people must meet if they either need meeting space, or expect to have documents distributed for working group consideration prior to the 2-week deadline. All documents should be sent as soon as possible.

## **7 New business**

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

Mike Lay said that we have another meeting before we need to do anything, and reminded everyone that if they can reasonably expect the list of issues from the E1.68 group before then, that will help determine what will need to happen with this standard.

There was discussion about the timelines required for reaffirmation, limited public reviews, revision, etc.

Milton Davis summarized the discussion by saying that he thought the working group did not wish to withdraw this project, and that we will discuss what to do with this at the next meeting, after the E1.68 group submits its list of possible issues.

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

Paul Beasley suggested they decide what to do with this at the Summer meeting.

There was other discussion about the potential interactions between this and the E1.77 protocol requirements.

Mike Lay asked for a volunteer to review what needs to happen with this standard. Maya Nigrosh volunteered. Richard Thompson, Shawn Silverman, Sam Kearney, Paul Beasley (Co-leader), and Kevin Loewen were appointed.

## **7.3 NAMM Presentations**

Milton Davis said he has a meeting tomorrow to discuss how we will fill 6 hours of sessions. He asked for suggestions for how to fill six 50-minute session slots, on Friday-Saturday 14-15 April. Several people said they would contact Milton with suggestions.

Mitch Hefter asked who else is handling the other tracks. Robert Haycock is handling the safety track, Alan Rowe is handling the electrical track.

## **7.4 Email Reflectors**

There was discussion about using the reflectors, advantages and disadvantages to all of the alternates.

Michael Lay summarized that all reflector requests should go to Michael Lay or Milton Davis. They will only send them to ESTA staff on Fridays. Maya Nigrosh will investigate automated listservs or other staff labor-saving alternatives.

## **8 Other business and announcements**

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

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

Mitch Hefter reported NEC is open for public inputs until 7 September, Comments can be submitted online at [www.NFPA.org/70](http://www.NFPA.org/70). It requires account access. Jason Potterf reported that this is a window that opens once every three years. Suggestions that miss this open period will have to wait for the next edition of the NEC.

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

*Bill Ellis or Mitch Hefter to report.*

Mitch Hefter reported that he's the Chairperson on the Lighting Control Systems committee. They are making updates to LP6, and working on updating educational materials.

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

*Jason Potterf to report.*

Jason Potterf reported that the 10base T1L project is moving along. Daisy-chained, multi-drop with power distribution is proving to be a problem. Hybrid cables might be a solution: power on one set of wires and data on another. He also suggested everyone should check out 802.3DA.

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

*Mitch Hefter to report.*

Mitch said there is nothing to report.

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

*Scott Blair or Marcus Bengtsson to report.*

Scott Blair reported, education and metadata collection are the two primary work areas. On the education area, they are working with educational institutions to train people in virtual production. Interoperability work-flow has been divided up into different areas: Data acquisition and presentation are the two that mainly apply to us. The first is camera tracking and camera metadata, so that the information can be used in post-production or to set up pick-up shots that work. The OTP task group has been collaborating with them on the metadata project. All the metadata work is on GitHub.

They plan on holding the first color management sprint meeting in February. The first lighting sprint meeting will be held on 13 April, with a target date for first-round review in June. They are also working on how these ad hoc recommended practices can be worked into formal standards – their own, and others, including ESTA.

## **8.6 Plugfests**

### **8.6.1 Europe**

*News and announcements. PLASA Plugfest has been scheduled for March 7-9 in Lille France. Registration information can be found at <https://www.plasa.org/plugfest-lighting-protocols-europe/>*

Peter Willis reported that it's on-track, that rooms are filling quickly, and suggested those planning to attend should get room reservations in immediately, to avoid disappointment.

### **8.6.2 USA**

*News and announcements. See 2022 Plugfest survey results, CPWG\_Plugfest\_Survey\_Results\_Sept\_2022.pdf as well as our post September 2022 conference survey results, ESTA CPWG Post Conference Survey Email.pdf*

Mike Lay reported. They had great turnout in Westlake. He thanked Eric Johnson for managing the room. They issued two surveys afterwards, the results of the hotel survey have been sent to Laura Hoepker. He mentioned a few more feedback comments and addressed them.

Based on feedback, he proposed having one Plugfest in October, it running for one additional day, and with no evening meetings being scheduled.

### **8.7 Above & Beyond Awards**

Attendees were reminded 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).

Scott Blair presented an award to Dan Murfin. He read the nomination statement in support of giving Dan this award:

*I'd like to present the 2022 Above and Beyond award to Dan Murfin, beyond his significant efforts in leading task groups, he has gone above and beyond in contributing personal resources in supporting and promoting the E1.59 protocol with his articles in Protocol, the OTRProtocol.org website and software tools dedicated to making implementation of the protocol easier for everyone. Dan understands that the work doesn't stop just because the standard is published and that it takes the promotion, education, and tools to ease implementation and make the standard accessible to everyone. Congratulations Dan.*

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

*The full meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>.*

The spring meetings will be in person and via WebEx at NAMM in April, not at USITT. The schedule is not set yet.

Summer meetings will be held in Westlake, TX during the week of 24 July, then returning to Westlake again during the week of 03 October, for the fall meetings.

### **10 Adjournment**

The agenda business being complete, there being no further business brought forth, Milton Davis adjourned the meeting at 13:12.

**Control Protocols Working Group members as of 17 January 2023**

<b>Name</b>	<b>Representing</b>	<b>Status</b>	<b>Int Cat</b>
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
Andrew Berry	X-Laser	O	MP
Scott M. Blair	Megapixel	P	CP
Eric Bloom	Westview Productions	P	DR
Jim Bogdanowicz	CHAUVET & Sons Inc.	A	MP
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
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

### Control Protocols Working Group members as of 17 January 2023

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
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
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
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 Heffer	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 Hoon	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
Quinten James	QtoCue Lighting Design	O	U
Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	O	MP
John Valus Jr.	Lex TM3	O	CP

### Control Protocols Working Group members as of 17 January 2023

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
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
Jim Ohrberg	Candela Controls, Inc.	A	DR
Jaxon Patterson	Insight Lighting	O	MP



### Control Protocols Working Group members as of 17 January 2023

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
Yngve Sandboe	Sand Network Systems, Inc.	O	MP
Jessica Sanders	Villain Lighting LLC	O	U
Nicolai Gubi Schmidt	Nicolai Gubi Schmidt	O	U
Ford Sellers	Chauvet Lighting	O	MP
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
Jeong Sik Yoo	Ghost LX	O	DE
Liang Zhiguang	Guangzhou Haoyang Electronic Co., Ltd.	P	CP