

Minutes
Control Protocols Working Group
Monday, 24 July 2017
D/FW Marriott Solana
Westlake, Texas

Presiding chairperson: Michael Lay; Philips Color Kinetics; Philips Lighting; P; MP

Recording secretaries: Karl Ruling and Erin Grabe; ESTA

Members in attendance:

Daniel W. Antonuk; Electronic Theatre Controls, Inc.; P; MP
Paul Beasley; Walt Disney Imagineering; Walt Disney Company; P; U
Scott M. Blair; Full Throttle Films/ VER; P; DR
Edward R. Condit; OSRAM Lighting Solutions; OSRAM Licht AG; O; G
Fraser Connolly; Obsidian Controls Ltd.; P; DE
Milton Davis; Doug Fleenor Design, Inc.; P; MP
Bill Ellis; Candela Controls, Inc.; P; DE
Andrew Frazer; Stellasces.com; P; MP
Robert Goddard; Goddard Design Co.; P; MP
Mitch Heffer; USITT; P; U
Jon Hole; Zero 88; Eaton; P; MP
Wayne David Howell; Artistic Licence Engineering Ltd.; Artistic Licence Holdings; P; DE
Tyrone Mellon_Jr.; Lex Products; Lex TM3; P; CP
Michael Karlsson; LumenRadio AB; P; MP
Sam Kearney; Electronic Theatre Controls, Inc.; A; MP
Paul Kleissler; City Theatrical, Inc.; P; MP
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH; P; U
Roger Lattin; I.A.T.S.E. Local 728; P; U
Dan Lisowski; Dept. Of Theatre and Drama; University of Wisconsin - Madison; P; DE
Kevin Loewen; Pathway Connectivity; Acuity Brands Inc.; P; MP
Jim Love; Tait Towers; Tait Towers Manufacturing LLC; P; MP
Daniel Murfin; Royal National Theatre; P; U
Simon Newton; Open Lighting Project; P; G
Jason Potterf; Cisco; P; MP
Larry Schoeneman; DesignLab Chicago, Inc.; P; DR
Ken Vannice; Ken Vannice LLC; I; G
Peter Willis; Howard Eaton Lighting Ltd.; P; CP

Visitors:

Jim Bagdanowicz; Kino Flo
Mark Primrose; Kino Flo

1 Opening remarks

Michael Lay called the meeting to order at 9:30. He welcomed everyone to Westlake and asked everyone to silence their devices and to be aware of the noise they make around the microphones on the tables.

2 Attendance

2.1 Introductions of those physically present and circulation of attendance sheet

A rainbow sign-in sheet was passed around the room while self-introductions took place.

2.2 Introductions of those present via WebEx

2.3 Determination of a quorum

By a count of voters' raised hands, Michael Lay declared a supermajority present.

2.4 Recognition of alternate voting members

Sam Kearney was recognized as an Alternate, not voting today.

3 Membership

3.1 Requirements for membership

The following statement was read aloud to the assembly by Michael Lay:

Membership is open to all who are affected by the work of the group. People and companies that would be in any interest category other than a manufacturer interest category are, at this time, particularly encouraged to apply for membership. There is an annual \$100 participation fee for all members. Voting members are required to attend meetings and to vote on letter ballots. Voting members and their alternates may not miss three consecutive meetings without a loss of voting status.

3.2 Changes to observer status due to lack of attendance

There were no voters in jeopardy of a change to Observer status due to lack of attendance.

3.3 Processing of new membership requests and changes in membership status:

As of 24 July 2017, the following applications or requests for status change were received:

Andrew Atienza; VER; A; DR
Jeong Sik Yoo; Ghost LX (change in representation)
Anthony Chiappone; Chauvet; O; MP

Larry Schoeneman moved to approve the applications and changes in status. The motion was seconded and approved by a show of hands.

3.4 Consensus body

The full consensus body during this meeting, including those not present, was:

Delegate	Representing	Voting status	Int. cat.
Kevin Loewen	Acuity Brands Inc.	P	MP
Robert Bell	Acuity Brands Inc.	A	MP
Gary Douglas	Acuity Brands Inc.	A	MP
Maurits van der Hoorn	Acuity Brands Inc.	A	MP
Wayne David Howell	Artistic Licence Holdings	P	DE
Bill Ellis	Candela Controls, Inc.	P	DE
Brent Boulnois	Candela Controls, Inc.	A	DE
Jim Ohrberg	Candela Controls, Inc.	A	DE
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Larry Schoeneman	DesignLab Chicago, Inc.	P	DR
Milton Davis	Doug Fleenor Design, Inc.	P	MP
Ian Campbell	Doug Fleenor Design, Inc.	A	MP
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	P	U

Delegate	Representing	Voting status	Int. cat.
Jon Hole	Eaton	P	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Edward A. (Ted) Paget	Electronic Theatre Controls, Inc.	A	MP
Sam Kearney	Electronic Theatre Controls, Inc.	A	MP
Scott M. Blair	Full Throttle Films/ VER	P	DR
Jeremy Hochman	Full Throttle Films/ VER	A	DR
Claude Ostin	Full Throttle Films/ VER	A	DR
Andrew Atienza	Full Throttle Films/ VER	A	DR
Robert Goddard	Goddard Design Co.	P	MP
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
Roger Lattin	I.A.T.S.E. Local 728	P	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Ken Vannice	Ken Vannice LLC	I	G
Tyrone Mellon_Jr.	Lex TM3	P	CP
Michael Karlsson	LumenRadio AB	P	MP
Fraser Connolly	Obsidian Controls Ltd.	P	DE
Simon Newton	Open Lighting Project	P	G
Michael Lay	Philips Lighting	P	MP
Daniel Murfin	Royal National Theatre	P	U
Andrew Frazer	Stellascapes.com	P	MP
Jim Love	Tait Towers Manufacturing LLC	P	MP
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Dan Lisowski	University of Wisconsin - Madison	P	DE
Mitch Hefter	USITT	P	U
Paul Beasley	Walt Disney Company	P	U
	Total votes possible	27	
	Votes by interest categories	2	CP
		4	DE
		2	DR
		2	G
		11	MP
		6	U

Voting status: P=principal; A=alternate; I=individual

Int. cat.: CP=custom-market producer; DE=designer; DR=dealer or rental company; G=general interest; MP=mass-market producer; U=user

4 Approval of the minutes from the previous meeting

See *CPmin03-2017.pdf*

Scott Blair moved to approve the minutes of the last meeting. The motion was seconded and approved by a show of hands with no objections or abstentions.

5 Reading of the call for patents

The following statement was read aloud to the assembly by Michael Lay:

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 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.

6 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Michael Lay:

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 a ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.

Erin Grabe and Karl Ruling held up copies of the pamphlets. Nothing was revealed.

7 Approval of agenda

To the agenda, Michael Lay added 9.1 NAMM, 9.2 UL 5500, and 9.3 New project. Mitch Hefter added a discussion of the IES to item 10.7. Peter Willis requested that a vote of thanks be added to item 10.9 CPWG leadership.

Fraser Connolly said that he would like to have some students attend the WebEx on the next meeting, and asked if this was an action item. Karl Ruling noted that visitors are welcome to attend.

Scott Blair moved to approve the amended agenda. The motion was seconded and approved by a show of hands with no objections or abstentions.

8 Old business

8.1 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 (R2016), 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 17 February 2021)

ANSI E1.11 – 2008 (R2013), Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. (Revision, reaffirmation, or withdrawal by 13 March 2018)

ANSI E1.17 – 2015 Entertainment Technology - Architecture for Control Networks (ACN) (Revision, reaffirmation, or withdrawal by 21 May 2020)

* ANSI E1.20 - 2010, Remote Device Management over USITT DMX512. (Revision, reaffirmation or withdrawal by 4 January 2016 – PINS filed for revision)

ANSI E1.27-1 – 2006 (R2016), Entertainment Technology - Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products. (Revision, reaffirmation or withdrawal by 8 April 2021)

ANSI E1.27-2 – 2009 (R2014), 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 9 June 2019)

ANSI E1.30-1 – 2010 (R2016), EPI 23, Device Identification Subdevice. (Revision, reaffirmation or withdrawal by 17 February 2021)

ANSI E1.30-3 – 2009 (R2014), EPI 25, Time Reference in ACN Systems Using SNTP and NTP. (Revision, reaffirmation, or withdrawal by 9 June 2019)

ANSI E1.30-4 – 2010, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. (Revision, reaffirmation, or withdrawal by 25 September 2020)

ANSI E1.30-10 – 2009 (R2014), EPI 32, Identification of Draft Device Description Language Modules. (Revision, reaffirmation, or withdrawal by 9 June 2019)

* ANSI E1.31 - 2016, Lightweight streaming protocol for transport of DMX512 using ACN (Revision, reaffirmation, or withdrawal by 11 October 2021)

* ANSI E1.37-1 – 2012 (R2017), Additional Message Sets for ANSI E1.20, Remote Device Management. (Revision, reaffirmation, or withdrawal by 18 May 2022)

ANSI E1.37-2 - 2015, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages. (Revision, reaffirmation, or withdrawal by 25 September 2020)

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

8.2 BSR E1.20 - 201x, Remote Device Management over USITT DMX512

Simon Newton said the task group met yesterday. They worked through a list of about 90 items. Notes of the meeting need to be typed up and sent to the group, and homework assignments need to be doled out. Action will not be ready to be taken by the next meeting, and task group meetings for LDI have not yet been scheduled. Peter Willis said that new features should be put on the back burner.

8.3 BSR E1.30-11, EPI 33, Transport of root PDUs over TCP

From the draft October 2016 minutes:

There was some discussion on whether or not there was a problem in waiting to publish this so long after its last public review. Karl Ruling advised that it would need to be offered for another public review before it is submitted for final ANSI approval. The consensus was to offer it for public review with BSR E1.33.

Simon Newton said that this project is still on hold until a new draft of 1.33 is ready.

8.4 BSR E1.31 – 20xx, Entertainment Technology—Lightweight streaming protocol for transport of DMX512 using ACN (revise, reaffirm, or withdrawal by 11 October 2021)

Last published in 2016. A PINS for revision was filed with ANSI. The first public review of the revision closed on 8 May 2017, see E1-31_201xFrstRvwSummary.pdf.

See E1-31_201xFrstRvwDraftResols.pdf, E1-31-201x_2017-07-05_PR_02.pdf, E1-31-201x_2017-07-05_PR_02_vs_PR_01.pdf, and E1-31-201x_2017-07-05_PR_02_vs_Prev_Std.pdf, distributed to the CPWG on 7 July 2017.

Jason Potterf said that a whopping seven comments were received during the public review. One of the comments pointed out a bug, so another review is needed. Some comments were contentious, some were rejected, and there were spirited discussions in the task group meeting. Jason Potterf moved to approve the comment resolutions as drafted. The motion was seconded and approved by a show of hands with no objections or abstentions.

Jason Potterf then moved to approve another public review of E1.31. The motion was seconded and approved by a show of hands and WebEx chats with one objection from Andrew Frazer. Jason noted that there are some items on the books for a future revision, but the goal is to get this out as is, sooner rather than later.

8.5 BSR E1.33, Transport of ANSI E1.20 (RDM) in an E1.31 environment

From the draft March minutes:

Scott Blair said that 197 comments came in during the last public review. All but about one dozen comment resolutions have been implemented into the current draft. The rest will be added and then an editorial review of the full draft will be done. The intent is to have something for this body to consider in July.

Scott Blair said all of the comments were resolved and rolled into the document. The document is in final formatting by Dan Antonuk, and the task group is hopeful that a document will be ready for consideration at LDI. Dan Antonuk said that there will need to be a final task group review after the final editing is done.

8.6 ANSI E1.37-1 – 2012 (R2017), Additional Message Sets for ANSI E1.20, Remote Device Management.

Peter Willis said that some people have implemented E1.20 without knowledge of this additional document, and as a result have implemented manufacturer-specific messages that already exist in E1.37-1. He asked that a note be added to the E1.20 published doc page directing people to also download E1.37-1. Kevin Loewen asked about zipping the files together. The consensus of the group was that ESTA staff should zip the E1.37 suite and the E1.20 document together so that downloading E1.20 gets the additional message sets. Karl Ruling said that he would zip the files and post them to the website.

8.7 BSR E1.37-4, Firmware updates via ANSI E1.20, RDM

Peter Willis said that the task group met yesterday. Some editing still needs to be done on the document, reported Peter, but all of the fundamental necessities have been incorporated. There was a relatively small input from the task group on CRC details. He said that he hopes to have the task group review the document by email

before LDI, and his expectation, barring feedback about fundamental details, is to motion to offer it for a first public review at LDI.

8.8 BSR E1.37-5, General Purpose Messages for ANSI E1.20 RDM

Simon Newton said that the task group had a five minute meeting, and there will hopefully be a document for this group to consider at LDI.

8.9 BSR E1.37-6 - 20xx, Additional Message Sets for ANSI E1.20 (RDM) - Parameter Description Messages

This project is a low priority, said Simon Newton. Peter Willis said that this document is the lowest priority per the manufacturers he got feedback from at the EU Plugfest.

8.10 BSR E1.37-7 - 20xx, Additional Message Sets for ANSI E1.20 (RDM) - Gateway and Splitter Configuration

Scott Blair said that 100+ comments came in and that all have been resolved and rolled into the draft standard. The document still needs updated section references, and that the task group would like to wait in offering this standard for another review until the public review of E1.33 happens. Peter Willis asked when the document would be circulated within the task group, to which Scott Blair replied that it had been circulated twice in the last 6 weeks, with little feedback received. Scott Blair said he will send the draft, again, and reiterated the task group's intention to offer it for public review when E1.33 is ready for public review.

8.11 E1.37-x, Additional Message Sets for ANSI E1.20, LED walls and video displays

This project is still in a holding pattern for E1.33 and other active projects, said Scott Blair.

8.12 BSR E1.59 - 201x, Automation Vector Transmission Protocol

Dan Lisowski said that the task group met on Saturday and made progress on a plan for a white-paper. He noted discussions on a white-paper vs. an article for *Protocol* magazine, and that the group has decided to do both. Michael Lay requested that the white-paper be circulated within the CPWG before an official release.

8.13 IPv6 task group report

Documents in order of priority for IPv6 consideration:

- E1-31 - 2016 -Entertainment Technology –Lightweight streaming protocol for transport of DMX512 using ACN (open for revision as of January 2017)
- E1.37-2 - 2015 Entertainment Technology –Additional Message Sets for ANSI E1.20 (RDM) –Part 2, IPv4 & DNS Configuration Messages
- E1.17 - 2015 -Entertainment Technology -Architecture for Control Networks (ACN) Elements of E1.17 depended on by E1.31 must be addressed as a high priority

Jason Potterf said IPv6 implementation in E1.31 is essentially done. As far as E1.37-2 is concerned, Jason said that he would like opinions from the group on adopting IPv6 message sets. There was discussion on opening the project to change the title and expand the scope. Peter Willis said that he is in favor of a new document, instead of a revision of an existing standard. This is a low priority, though, noted Jason, who has no strong opinion either way on a new document versus a revision. Michael Lay asked Jason Potterf to look at E1.37-2 again and come back at LDI with a plan.

8.14 European Plugfest

Peter Willis said that the event happened back in April with approximately 25 attendees, a slightly downward attendance from the last Plugfest. Peter noted the insignificance of the lower attendance, because there was a wide range of participation from other European countries. The event broke even for PLASA, said Peter, and the event is becoming an integral part of PLASA's agenda.

8.15 Texas Plugfest

Scott Blair said that there are a lot of new people and that there's been a lot of great feedback being offered all around. This Plugfest has been an engaging event. There was some discussion on the sign-in sheet and tracking attendance.

8.16 AUS Plugfest

Andrew Frazer noted no new news on this topic. He would still like to meet people at LDI and see what level of interest there might be.

8.17 Task group leader coordination

Scott Blair is the official scheduling liaison between the CPWG task groups and Frances Thompson. Anyone needing a physical task group meeting at an upcoming event should contact Scott.

Michael Lay would like each group to have a co-chair. He asked that groups consider their recommendations, and let the group know by LDI.

BSR E1.30 No single leader; Generic group

BSR E1.31 Jason Potterf

BSR E1.37-4 Peter Willis

BSR E1.20 Simon Newton

BSR E1.33 Dan Antonuk and Scott Blair

BSR E1.30-11, EPI 33 Simon Newton

BSR E1.37-2 Simon Newton

BSR E1.37-5 Simon Newton

BSR E1.37-6 Simon Newton

BSR E1.37-7 Scott Blair

BSR E1.59 Dan Lisowski

E1.37-x Video Walls Scott Blair

IPv6 Task Group Jason Potterf

Plugfest Marketing Task Group Michael Lay

Task Group Liaison Scott Blair

9 New business

9.1 NAMM

Michael Lay noted that the CPWG and the Technical Standards Program will be having our meetings in conjunction with that show. Milton Davis said that the show is at the Anaheim Convention Center, next to Disneyland. He noted that the show is not just music, but that there is lighting and a bit of rigging. The organization is really trying to expand the show to incorporate a lot more lighting and rigging. Hotels fill up fast and we still don't know when our meetings will be.

Michael Lay added that they are adding 100,000 sq feet of show space. It's a very different show than LDI. NAMM is also a non-profit, and the ESTA/NAMM partnership is a good cultural fit between the two organizations.

9.2 UL Announces the Development of UL 5500, Remote Software Updates

Bill Ellis noted that UL has announced a new project, UL 5500. They are limiting the scope to the safety and compliance with regard to safety standards.

9.3 LLDP

Jason Potterf addressed the group. He said that one of the problems our protocols face in the field is that they appear hostile to network infrastructure. In the past, this has been ameliorated by using a closed network, and there is a better way to do it, which is to set our protocols to have a legitimate registry with a unique identifier that is traceable to ESTA. This would allow equipment to operate on a network without looking like a DoS attack on the network. There was further discussion on LLDP. Dan Antonuk said that it does not protect our network from security threats, but that the registration would validate entertainment devices on the network. The consensus of the group is that pursuing this project is a good idea. Michael Lay will communicate our desire to start this project to the TSC, and advise them that, if we proceed, there will be some costs to register an ESTA identifier.

10 Other business & announcements

10.1 Manufacturer-specific vector types

Dan Antonuk addressed the group. He has not had time to pursue this or write up a proposal, though there has been interest with people he's spoken to about it.

10.2 Market research

Andrew Frazer hasn't done anything on this project but will let us know in the future if there is something else to do on this. This item will be struck from the agenda until such a time as there is an action item.

10.3 Above & Beyond Awards

Michael Lay noted that the Above and Beyond Award nomination form, as well as a list of past recipients, is available at <http://estalink.us/aboveandbeyond>.

10.4 ESTA Lifetime Technical Achievement Award

Michael Lay said that long-time CPWG member, Bob Goddard, was the first recipient of this new award, given out just before this meeting. He congratulated Bob, and Bob received a warm round of applause.

10.5 ESTA DMX512/RDM Educational Kit - "Train the Trainer" Session

Bill Ellis said he's gotten together with Roger Lattin about cases for the gear in the kit and they're working on logistics to get the cases from CA to FL.. The kit can then go to the first requestor, John Huntington, at New York City College of Technology.

There was discussion on whether or not a DMX 101 session would be appropriate for the NAMM show, and the consensus was yes, it would be. Bill Ellis said the Train the Trainer presentation would have to be restructured, and he noted that NAMM's preference is to have hands-on, interactive sessions. Michael Lay said to reserve the kit for January, because we're all in for the NAMM in January.

10.6 USITT sessions

Program proposals for USITT 2019 are due by USITT 2018. Put your thinking caps on and get some sessions submitted!

Dan Lisowski reported that he is no longer on the programming committee, so he is not certain when the collection of proposals starts.

10.7 Architectural Market Outreach Study Group

From the draft January minutes:

Michael Lay appointed Bob Goddard, Mitch Hefter, Bill Ellis, and Javid Butler to a study group. The study group was instructed to get together and bring back ideas on tapping the architectural market for involvement in developing and implementing ESTA standards.

Mitch Hefter said that not much has been done on this project, yet, but that the restructuring of IES's standards program could initiate some action. He noted that he will propose a new standard for noting dimming methods. He'll keep the group posted on whether this project overlaps with us in any way.

Wayne Howell noted that IoT protocols are becoming a bigger thing and that perhaps this study group could look at expanding their scope to include a communication with the IoT standards folks to eliminate conflicts and share knowledge. He said that they could benefit from our work, instead of re-inventing the wheel. There was some discussion on the seemingly "wild-west" nature of the work in the IoT world.

10.7 INNOVA

Michael Lay said that USITT and ESTA have partnered up to bring you INNOVA, an online learning platform for the entertainment technology industry. Check it out at <http://innova.usitt.org>. Content and content providers are being sought. If you are interested, email standards@esta.org to be put in touch with someone.

Mitch Hefter said it launched in May, not April as intended, after a few technical problems. There are some free videos on there, but, for videos that cost the users money, ESTA, USITT, and the training provider all share the royalties.

10.8 Please Direct People to ESTA's Website for Standards

Michael Lay said that, when you want people to be aware of our standards, or to put a copy in front of them, please direct them to http://tsp.esta.org/tsp/documents/published_docs.php rather than providing copies on your own website or direct links to the published standards. He noted all of the several included on the agenda, and asked people to read them for more information.

- 1. The free downloads are sponsored by ProSight Specialty Insurance, which benefits from the promotion and from the opportunity people have to click on "Please send me more information about entertainment insurance." We need to earn their continued support by helping their sponsorship to return some value to them.*
- 2. Some of the websites offering our standards are not up to date and list superseded standards as though they are the latest version. This could cause problems for the host company and our industry, because requirements in an old standard may not be the same as the requirements in a later version of that standard. Superseded standards are still available from ESTA, but they are watermarked, "Superseded," so people can get them if they need them, but it is clear that the old standards are not the current editions.*
- 3. If you direct people to ESTA's site, they might also see the plea to help support the TSP as an Investor in Innovation. We need continuing support from the industry, and the broader that support is, the more secure we are and the less the burden is on any individual donor.*
- 4. If you direct people to ESTA's site, they might see some other standards that will help them in their work. At a minimum, they will see the depth of the offerings and understand that there is standards work being done in a number of areas affecting our industry.*

Please, promote your work with the TSP on your website. List all of the standards for this working group, that you've personally worked on, or that are pertinent to your business, but, please, direct people to http://tsp.esta.org/tsp/documents/published_docs.php to download the standards. If nothing else, doing so would lessen your workload, because you wouldn't have to update the page every time a standard is reaffirmed or revised. That saves you time and money and perhaps makes a little money for the TSP.

10.9 CPWG leadership

On 27 April 2017, TSP staff received a formal resignation from CPWG co-chair Maya Nigrosh. Nominations for a replacement co-chair to recommend to the TSC will be accepted at this meeting, followed by a vote via email shortly after this meeting.

Michael Lay said that Maya Nigrosh, sadly had to end her leadership of the group, hopefully temporarily. Michael noted that Maya had made many valuable contributions to the ESTA TSP program, as she carried a lot of the heavy water on a lot of different task group within the CPWG. Maya was also an invaluable co-chair, and we hope that she will be able to return to volunteering for ESTA in the future.

Nominations were requested of the group for a new co-chair. Several nominations were received, and, by an instant runoff, Milton Davis was been selected as the recommendation to the TSC for a new CPWG co-chair. The recommendation will be brought to the Technical Standards Council.

11 Future meetings

Michael Lay noted that the full meeting schedule may always be found at <http://www.esta.org/ESTA/meetings.php>.

11.1 November meetings

Michael Lay said that the November meeting is scheduled for Thursday, 16 November 2017, from 9:00 a.m. to noon at the Tropicana in Las Vegas, NV.

Scott Blair said that meetings for 1.59, 1.20, 1.33 are on the books to be scheduled for LDI and asked if there were any others. Peter Willis added a meeting for 1.37-4.

Milton Davis noted that the Plugfest round-table discussions is tonight at 7:00 p.m. and asked folks to attend, either online or in person.

11.2 January meetings

Michael Lay said that the January meetings will take place in conjunction with the NAMM show in Anaheim, CA, which is scheduled for 25-28 January 2018. Meeting dates and times TBD.

12 Adjournment

Mitch Hefter moved to adjourn. The motion was seconded. Hearing no objections, Michael Lay declared the meeting adjourned at 11:47 a.m. CDT.

Name	Company	Representing	Voting status	Int cat
Christian Allabauer	Christian Allabauer	Christian Allabauer	O	G
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Matthew Ardine	IATSE Local 728	IATSE Local 728	O	U
Andrew Atienza	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Paul Beasley	Walt Disney Imagineering	Walt Disney Company	P	U
Robert Bell	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Scott M. Blair	Full Throttle Films/ VER	Full Throttle Films/ VER	P	DR
Brent Boulnois	Candela Controls, Inc.	Candela Controls, Inc.	A	DE
Javid D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Justyn Butler	JBOTS	JBOTS	O	CP
Ian Campbell	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP
Anthony Chiappone	Chauvet Lighting	Chauvet Lighting	O	MP
Jon Chuchla	Audio Visual Systems, Inc.	Audio Visual Systems, Inc.	O	G
Edward R. Condit	OSRAM Lighting Solutions	OSRAM Licht AG	O	G
Fraser Connolly	Obsidian Controls Ltd.	Obsidian Controls Ltd.	P	DE
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Jeremy Day	Lumenpulse Lighting Inc.	Lumenpulse Lighting Inc.	O	MP
Larry Dew	W.A. Benjamin Electric Co.	W.A. Benjamin Electric Co.	O	DE
Rich Dionne	Dept. of Theatre	Purdue University	O	DE
Gary Douglas	Pathway Connectivity	Acuity Brands Inc.	A	MP
Tucker Downs	Tucker Downs	Tucker Downs	O	U

Name	Company	Representing	Voting status	Int cat
Hamish Dumbreck	JESE Ltd.	James Embedded Systems Engineering	O	MP
James Eade	ABTT	ABTT	O	G
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	P	DE
Paul K. Ericson	Sparling	Stantec	O	DE
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Andrew Frazer	Stellascapes.com	Stellascapes.com	P	MP
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
George Gong	Philips Lighting	Philips Lighting	O	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Erin Grabe	ESTA	ESTA	exf	G
Sean Harding	Port Lighting Systems	Port Lighting Systems	O	G
Mitch Hefter	Mitch Hefter	USITT	P	U
Bill Hewlett	ImageCue LLC	ImageCue LLC	O	MP
Julian Hoare	Tait Towers	Tait Towers Manufacturing LLC	A	MP
Jeremy Hochman	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Jon Hole	Zero 88	Eaton	P	MP
Jim Holladay	Luxence	Luxence	O	G
Maurits van der Hoorn	Pathway Connectivity	Acuity Brands Inc.	A	MP
Wayne David Howell	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	P	DE
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Eric Johnson	Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Tyrone Mellon_Jr.	Lex Products	Lex TM3	P	CP
Michael Karlsson	LumenRadio AB	LumenRadio AB	P	MP

Name	Company	Representing	Voting status	Int cat
Sam Kearney	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Jonathan Kemble	High End Systems	ETC	wtg	MP
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	E3 Engineering & Education for Entertainment GmbH	P	U
Jason Kyle	JPK Systems Ltd.	JPK Systems Ltd.	O	MP
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Michael Lay	Philips Color Kinetics	Philips Lighting	P	MP
Hans Leiter	ETC GmbH	Electronic Theatre Controls, Inc.	O	MP
Jon Lenard	Applied Electronics	Applied Electronics	O	MP
Dan Lisowski	Dept. Of Theatre and Drama	University of Wisconsin - Madison	P	DE
Kevin Loewen	Pathway Connectivity	Acuity Brands Inc.	P	MP
Jim Love	Tait Towers	Tait Towers Manufacturing LLC	P	MP
Royal Marty	ZFX, Inc.	ZFX, Inc.	O	MP
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Daniel Murfin	Royal National Theatre	Royal National Theatre	P	U
John Musarra	John Musarra	John Musarra	O	U
Simon Newton	Open Lighting Project	Open Lighting Project	P	G
Jim Ohrberg	Candela Controls, Inc.	Candela Controls, Inc.	A	DE
Danilo Oliveira	Chauvet Lighting	Chauvet Lighting	O	MP
Claude Ostyn	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Edward A. (Ted) Paget	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Jason Potterf	Cisco	Cisco	P	MP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP

Name	Company	Representing	Voting status	Int cat
Charles Reese	Production Resource Group	Production Resource Group	O	DR
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Karl G. Ruling	ESTA	ESTA	exf	G
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	O	MP
Nicolai Gubi Schmidt	Gobo & Highlight A/S	Gobo & Highlight A/S	O	DR
Larry Schoeneman	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	P	DR
Ford Sellers	Chauvet Lighting	Chauvet Lighting	O	MP
Sean Sill	Sean Sill	Sean Sill	O	CP
Ralph Stillinger	Strand Lighting	Philips Lighting	O	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Christopher B. Tilton	About the Stage, LLC	About the Stage, LLC	O	DE
Robert Timmerman	Philips Color Kinetics	Philips Lighting	O	MP
James Tomlinson	Team Tomlinson	Team Tomlinson	O	G
Tracy Underhill	Triple C Lighting & Controls	Triple C Lighting & Controls	O	G
Ken Vannice	Ken Vannice LLC	Ken Vannice LLC	I	G
Carlo Venturati	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Colin Waters	TMB	TMB	O	DR
Ralph Weber	ENDL Texas	ENDL Texas	O	G
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Loren Wilton	Showman Systems	Showman Systems	O	CP
David Yellin	Sumolight GmbH	Sumolight GmbH	O	MP
Jeong Sik Yoo	Ghost LX	Ghost LX	O	DE

Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter, O = Observer member, exf = Ex Officio member (staff)

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