

Minutes
Control Protocols Working Group
Friday 17 January 2020
Wyndham Garden Anaheim
Anaheim, CA

Presiding chairperson: Milton Davis; Doug Fleenor Design

Recording secretaries: Richard Nix & Karl Ruling; ESTA

Members attending:

Tim Bachman; Altman Lighting; O; MP
Paul Beasley; Walt Disney Company; P; U
Robert Bell; Acuity Brands Inc.; A; MP
Marcus Bengtsson; disguise; P; MP
Rene Berhorst; MA Lighting; P; MP
Scott M. Blair; Megapixel; P; CP
Eric Bloom; Westview Productions; P; DR
Jim Bogdanowicz; Kino Flo, Inc.; A; MP
Pete Borchetta; Altman Lighting; P; MP
John David (Javid) Butler; Moda Light; P; MP
Fraser Connolly; Obsidian Controls; O; DE
Milton Davis; Doug Fleenor Design, Inc.; P; MP
Matt Didon; ON LX Limited; P; CP
Tucker Downs; Tucker Downs; O; G
Bill Ellis; Candela Controls, Inc.; P; DE
Robert Goddard; Goddard Design Co.; P; MP
Julian Hoare; Tait Towers Manufacturing LLC; A; MP
Jon Hole; Eaton; P; MP
Wayne David Howell; Artistic Licence Holdings; P; DE
John Huntington; I.A.T.S.E. Local 1; A; U
Sam Kearney; Electronic Theatre Controls, Inc.; P; 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
Kevin Loewen; Acuity Brands Inc.; P; MP
Jim Love; Tait Towers Manufacturing LLC; P; MP
Rob Love; Insight Lighting; O; MP
Vangelis Manolis; AtlaBase Ltd.; O; CP
David McCulloch; David McCulloch; O; U
Bill McIntyre; Show Distribution Group, Inc.; P; CP
Daniel Murfin; Royal National Theatre; P; U
Simon Newton; Open Lighting Project; P; G
Maya Nigrosh; Sonos; P; MP
Richard J. Nix; ESTA; exf; G
Leroy "Tripp" Oliver, III; Mainstage Theatrical Supply, Inc.; P; DR
Jason Potterf; Cisco; P; MP
Mark Primrose; Kino Flo, Inc.; P; MP
Karl G. Ruling; ESTA; exf; G
Yngve Sandboe; Sand Network Systems, Inc.; O; MP
Larry Schoeneman; Larry Schoeneman; I; DE
Shawn Silverman; Lighting Infusion LLC; P; DE
John Valus Jr.; Lex TM3; P; CP
Peter Willis; Howard Eaton Lighting Ltd.; P; CP

Visitor: Red Walter; ADJ Group

1 Opening remarks

Milton Davis called the meeting to order at 9:00. He welcomed everyone, thanking them for taking time to be here today. He reminded everyone to mute their cell phones and to be mindful of the live microphones near them on the tables .

2 Anti-trust and patent statements

2.1 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Milton Davis:

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.

Karl Ruling held up one of the pamphlets in front of the webcam for all to see. No anti-trust concerns were reported.

2.2 Reading of the call for patents

The following statement was read aloud to the assembly by Milton Davis:

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 reported.

3 Attendance and Membership

3.1 Requirements for membership

The following statement was read aloud to the assembly by Milton Davis:

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.

Michael Lay asked that people pay the fee sooner rather than later to avoid wasting staff time chasing unpaid fees.

3.2 Introduction of attendees

Karl Ruling showed everyone in the room the bright orange sign-in sheet, with many pages and many names on it, reminding everyone in the room to sign it as it is passed around the room.

Everyone in the room introduced themselves, then the online attendees were introduced.

The alternate voting members were recognized.

3.3 Determination of a quorum

Milton Davis announced that we have more than a majority of the voting body present.

3.4 Processing of new membership and status change requests

The following applications and status change requests have been received:

Bart Swinnen; Luminex Lighting Control Equipment; P; MP (new application) Swinnen was not present.

Michael Lay; Candela Controls, Inc.; A; DR (Change of status, change interest category for Candela Controls from DE to DR.)

Javid Butler; Moda Light; P; MP (change of employment and company represented)

Marcus Bengtsson; Disguise; P; MP (change of voting status)

Scot Blair moved to accept the applications, except Bart Swinnen should be accepted as an Observer, since he is not present. The motion was seconded and then approved unanimously.

There was a brief discussion of a future representation change for Jon Hole, since Eaton is being purchased by Signify, but that will be in two weeks, so the consensus was that we shall deal with his representation change at the next meeting.

3.5 Changes to observer status

3.5.1 Changes due to attendance

The following voters have missed the last two meetings and are in jeopardy of being moved to Observer status if this meeting is also missed:

John Valus Jr.; Lex TM3; CP

Simon Newton; Open Lighting Project; G

Eric Bloom; Westview Productions; DR

All were present, so there were no status changes.

3.5.2 Changes due to missed letter ballots

None at this time.

3.5.3 Automatic status changes

None at this time.

3.5 Consensus body

The table below shows the full consensus voting body during the meeting.

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
Pete Borchetta	Altman Lighting	P	MP
Wayne David Howell	Artistic Licence Holdings	P	DE
Christian Krueger	Blizzard Lighting LLC	P	MP

Delegate	Representing	Voting status	Int. cat.
Bill Ellis	Candela Controls, Inc.	P	DE
Brent Boulnois	Candela Controls, Inc.	A	DE
Jim Ohrberg	Candela Controls, Inc.	A	DE
Michael Lay	Candela Controls, Inc	A	DR
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Marcus Bengtsson	disguise	P	MP
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
Jon Hole	Eaton	P	MP
Sam Kearney	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
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
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
Mark Primrose	Kino Flo, Inc.	P	MP
Jim Bogdanowicz	Kino Flo, Inc.	A	MP
Larry Schoeneman	Larry Schoeneman	I	DE
John Valus Jr.	Lex TM3	P	CP
Shawn Silverman	Lighting Infusion LLC	P	DE
Michael Karlsson	LumenRadio AB	P	MP
Rene Berhorst	MA Lighting	P	MP
Leroy "Tripp" Oliver, III	Mainstage Theatrical Supply, Inc.	P	DR
Scott M. Blair	Megapixel	P	CP
John David (Javid) Butler	Moda Light	P	MP
Matt Didon	ON LX Limited	P	CP
Simon Newton	Open Lighting Project	P	G
Daniel Murfin	Royal National Theatre	P	U
Bill McIntyre	Show Distribution Group, Inc.	P	CP

Delegate	Representing	Voting status	Int. cat.
Maya Nigrosh	Sonos	P	MP
Jim Love	Tait Towers Manufacturing LLC	P	MP
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Mitch Hefter	USITT	P	U
Paul Beasley	Walt Disney Company	P	U
Eric Bloom	Westview Productions	P	DR
	Total	34	
	Subtotals	5	CP
		16	MP
		3	DE
		3	DR
		6	U
		1	G

Voting Status key: P = Principal voter, A = Alternate voter, I = Individual voter

4 Approval of the minutes from the last meeting

See CP_Min10-2019_DRAFTr3.pdf

Javid Butler moved that the draft minutes be accepted as written. The motion was seconded. The motion was approved unanimously.

5 Approval of agenda

An item of new business was requested by Scott Blair: List server maintenance.
Peter Willis requested an additional discussion of BSR E1.37-7

Scott Blair moved to approve the revised agenda. The motion was seconded. The motion was approved

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 (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 (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 Entertainment Technology - Architecture for Control Networks (ACN) (Revision, reaffirmation, or withdrawal by 21 May 2020)

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

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 (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 17 February 2021)

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 (R2015), 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 (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 (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)

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

*BSR E1.37-5 – 20xx, General Purpose Messages for ANSI E1.20 RDM (currently in public review cycle)

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 approval by 04 May 2024)

*BSR E1.59 – 20xx, Object Transform Protocol (currently in public review comment resolution)

*BSR E1.61 Network Advertisement of Entertainment Protocols

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

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)

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

[See BSR_E1-20_PR2_CmmntSmmry.pdf]

Wayne Howell reported. The task group had a meeting Thursday, January 16, and is planning another meeting. Howell said he expects to have draft comment resolutions ready in time to move to another public review in April.

6.3 ANSI E1.33 – 2019, Transport of ANSI E1.20 (RDM) in an E1.31 environment

Scott Blair reported that it is published and asked everyone to please implement it. He is still collecting errata. There was a discussion of the need for the working group to approve the errata document. Karl Ruling said that he or Richard will post the errata list when it is ready.

6.4 BSR E1.37-4 – 201x, Remote Device Management over DMX512 Networks – File Transfer Control with Firmware Upload capabilities

The last public review ended 9 April 2018.

Peter Willis reported that a lot of comments have been resolved. The most thorny issue is the selection of a CRC.

6.5 BSR E1.37-5 – 201x, General Purpose Messages for ANSI E1.20 RDM

[See BSR_E1-37-5_PR4_CmmntSmmry.pdf]

Scott Blair reported that Peter Newman had offered a lot of comments that show a deep reading of the draft standard. Should have comment resolutions to consider by the time of the USITT meeting.

6.6 BSR E1.59 - 201x, Object Transform Protocol

Consideration of draft comment resolutions and revised draft. See E1-59 OTP 2019-12-14.pdf and E1-59_ScndRvw_Resols.pdf.

Milton Davis noted that the document was sent late, after the two-week deadline. He asked if there are there any objections to dealing with it at this meeting, now? Hearing no objections, Davis directed the discussion to proceed.

Daniel Murfin reported that the document was simplified as part of addressing the public review comments.

Maya Nigrosh moved to approve the draft resolutions. The motion was seconded. The votes were all Yes, except for three abstentions. The motion carried.

Maya Nigrosh moved that the revised document be offered for public review. The motion was seconded. The motion was approved unanimously.

6.7 BSR E1.61 Network Advertisement of Entertainment Protocols

At the last meeting Jason Potterf reported he expects to have a document for the task group by January, with a document for the working group to consider for public review at the April meeting. News?

Jason Potterf said that this is low-priority, so he has put most of his effort into Next Gen. Michael Lay suggested that this is relatively low-hanging fruit and people can use this, so he urged Potterf to move forward on the first draft.

6.8 BSR E1.68 Recommended Practice to address DMX512 compliance and interoperability

Javid Butler reported on the productive task group meeting held Thursday 16 January. He described the scheduling problems with spanning time zones with WebEx, so the task group will work more on-line via the email reflector. This would be backed up with a WebEx meeting perhaps once a month.

He said that 3-pin versus 5-pin connectors continues to be an issue. He read a statement he wants the CPWG to approve. He moved that it be approved.

“Connectors for use with DMX512-A are specified in ANSI E1.11. Some manufacturers use connectors that are not compliant with ANSI E1.11.”

There was discussion. People were concerned about condoning non-compliance with the E1.11 standard, but also non-compliance does not mean that things can't work together with some effort by the end-user or system integrator, so we do not want to ignore the fact in a testing document that non-compliant devices might be interoperable.

Peter Willis expressed affirmation for the wording: clear, concise, and describes the simple pass-fail test. If a 5-pin XLR cannot be plugged into the connector, the test is failed. There was more discussion about the usefulness of stating that certain connectors do not comply. Wayne Howell suggested that the intent of adding any wording to this effect was to facilitate interoperability, not to chastise users for using a non-compliant connector. Jason Potterf pointed out that the Ethernet standard does not specify a connector; the RJ-45 connector has been widely accepted as the de facto standard connector even though the connector isn't specified.

Shawn Silverman suggested that the test is for the wiring, not necessarily for the connector, therefore the connector becomes slightly less important.

There was more discussion about the merits of all points being made. After several comments and feedback, Javid made notes on how to revise the wording, saying he had enough input from discussion for useful guidance. The motion was withdrawn.

6.9 ANSI E1.17 – 2015 Entertainment Technology - Architecture for Control Networks (ACN)

[See BSR_E1-17_PR1 CmmntSmmry.pdf and Smmry_WG_Ltr_Ballot for BSRE1-17_ReaffirmANS.pdf]

There were no comments in public review. The working group accepted the reaffirmation motion. Richard Nix reported that an approval vote is queued for TSC action at Sunday's meeting.

6.10 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)

At the last meeting Scott Blair suggested that this probably should be reaffirmed, but that he would preferred to wait until after the next meeting to take action. He asked people to submit comments on items they felt needed to be changed, if they have such suggestions. Any news or action now? It's the "next meeting."

Scott Blair reported. He suggested that IPv6 should be in another document. However, more discussion is needed. He suggested a final decision should be made later this year.

Peter Willis asked how many users in the room were actually implementing these PID's. Only one person acknowledged it, and Peter Willis said that they have not yet encountered real-world implementation. Shawn Silverman expressed his opinion that we should be moving towards IPv6, since IPv4 can be encapsulated within IPv6. Scott Blair and Sam Kearney both acknowledged this. There was more discussion, before Scott suggested that there be no action at this time, but to work on a scope statement for a new draft standard.

6.11 Next Gen Study Group

Jason Potterf reported on the overall Next Gen efforts. He said that the most important topic is Color, then fixture libraries. There seems to be no further need to develop network transport protocols, but rather we should use our expertise to develop at higher-levels. He asked the other study groups to provide their interim reports, then he gave a summary report afterwards, essentially saying that the timing is good for CPWG to help lead technological advancements regarding control signals for architecture, etc.

6.12 Next Gen Color study group

Jason Potterf reported this is an important project, and then deferred to to Mark Primrose who reported on E1.54. Mark Primrose said that there is a draft BSR E1.54 sent to the Photometrics WG. He wondered if there could be custom PIDs to help identify a luminaire's color-mixing capabilities.

6.13 Next Gen Transport study group

Jason Potterf reported that the study group is getting out of the business of making transports. The task group is now focused on finding an existing transport or a few that will work. They have reviewed several, but have not found a perfect transport method yet. They may be referring to SMPTE 2110, which covers a lot of this material.

6.14 Next Gen Luminaire Libraries study group

Sam Kearney reported on their survey of library models, looking at what people actually use and how well it works.

6.15 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 Blair

- BSR E1.20 Scott Blair and Wayne Howell
- BSR E1.37-2 Simon Newton
- BSR E1.37-4 Peter Willis
- BSR E1.37-5 Scott Blair and Simon Newton
- BSR E1.37-6 Simon Newton
- BSR E1.59 Dan Murfin and Maya Nigrosh
- E1.37-x Video Walls Scott Blair
- E1.61 NAEP Jason Potterf and Kevin Loewen
- E1.68 Javid Butler and Wayne Howell
- IPv6 Task Group Jason Potterf
- Next Gen Streaming Study Group Jason Potterf and Maya Nigrosh
- Plugfest Marketing Task Group Michael Lay
- NAMM Education Task Group Milton Davis
- Next Gen Color study group Mark Primrose and Tucker Downs
- Next Gen Transport study group: Maya Nigrosh and Jason Potterf
- Next Gen Fixture study group: Sam Kearney and Dan Murfin.

7 New business

7.1 NAMM Education

The current list of CPWG organized sessions is as follows:

- Ethernet Networking For The Mid-Sized Venue (Jon Hole)
- Troubleshooting Your DMX512 and RDM Control Network (Milton Davis)
- An Introduction to E1.33 RDMnet Running Over Ethernet Networks (Scott Blair)
- Tightbusting DMX512-A Compliance In The Entertainment Industry (Javid Butler)
- Mythbusting sACN and Art-Net On Your Lighting Network (Wayne Howell)
- Wireless DMX512 Networking For The Lighting Tech (Paul Kleissler)
- An Introduction To Show Networking (John Huntington)
- Advanced Ethernet Networking For Entertainment Systems (Kevin Loewen)

Michael Lay thanked all of the presenters for their willingness to contribute to this effort.

7.2 List server maintenance.

Scott Blair reported on the problems of knowing who is on what reflector. The reflectors used to be listed in the minutes. They will be added back in.

7.3 ANSI E1.37-7 - 2019, Additional Message Sets for ANSI E1.20 (RDM) - Gateway and Splitter Configuration.

Peter Willis reported that he had problems with implementing ANSI E1.37-7. He described being able to set parameters for a port that have no relevance to the port, without generating an error message. There was extended discussion in which people argued that the standard allows flexibility on the part of the manufacturer to implement or not certain features. Sam Kearney argued that it's not the function of the standardized protocol to require a manufacturer to generate error codes. Bob Goddard complained that not all products generate a NACK code, although RDM requires it.

Scott Blair asked Peter Willis to summarize the issue and send it to him, so the task group could discuss how to resolve it.

7.4 Other new business

None.

8 Other business and announcements

8.1 NEC update

Jason Potterf reported that NEC 2020 is out and being adopted. The comment period for proposed changes in the next version closes on 10 September 2020. He also reported that he has been put on Panel 18. It's an additional seat.

Article 530 is being revised, reported Hans Lau. The existing language is from the 1940s.

8.2 IESNA update

Bill Ellis reported nothing to report. They will meet at Lightfair in Las Vegas in May.

8.3 Plugfests

8.3.1 Europe

The European Plugfest will be held in Lille France, during the last week of February 2020 (25-27 February).

Event information can be found at <https://www.plasa.org/plugfest/>

Peter Willis reported. There are now 35 people signed up. The limit is 40, so sign up soon, if you want to attend. He noted that there is a good promotional video on the PLASA website. The 2021 Plugfest will be back in the UK.

8.3.2 USA

The United States Plugfest will be held in Westlake, TX during the fall ESTA conference, dates to be announced, said Milton Davis.

Michael Lay asked about the group's interest in meeting in conjunction with LDI in the autumn rather than in Westlake, Texas. Those who spoke thought it would be good to meet in Las Vegas in conjunction with LDI rather than in Westlake.

Jason Potterf suggested that meeting face-to-face was not needed, that WebEx could suffice. Other people around the table said that the face-to-face meetings are beneficial, particularly when dealing with comment resolutions. Some said that the task group meetings are working well via WebEx, but that the working group meetings are better face-to-face, but others said exactly the opposite.

8.4 Above & Beyond Awards

Attendees are reminded that information on the Above & Beyond Awards may be found at http://tsp.esta.org/tsp/news/award_recipients.html.

An Above & Beyond Award was presented to Peter Willis by Jon Hole.

Hole explained that Peter has been an active member of the CPWG for around 20 years. He is one of the originators of RDM and his product LabPack has been instrumental in advancing the take-up of RDM, by providing developers with quality test equipment. Products such as LabPack are invariably more passion than commercial sense. So the Above and Beyond is a great thank you to him.

9 Schedule for future meetings

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

9.1 Spring 2020 meetings (USITT, Houston, TX)

The Spring 2020 meetings will be held in conjunction with the USITT conference in Houston, TX, from 01-04 April 2020. The complete schedule has not yet been confirmed, but the CPWG is tentatively scheduled to meet from 09:00 to noon on Thursday 2 April.

9.2 Summer 2020 meetings (NATEAC, NYC)

The Summer 2020 meetings will be held in conjunction with the North American Theatre Engineering and Architecture Conference in New York City, 19-20 July 2020. The meeting schedule has not yet been confirmed.

10 Adjournment

The agenda being completed, and there being no further business to address, Milton Davis declared the meeting adjourned at 11:21.

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
Cameron Affleck	Cameron Affleck	O	U
Christian Allabauer	Christian Allabauer	O	G
Matthew Ardine	I.A.T.S.E. Local 728	A	U
Tim Bachman	Altman Lighting	O	MP
Nick Ballhorn-Wagner	Electronic Theatre Controls, Inc.	O	MP
Robert Barbagallo	Solotech Inc.	O	U
Tom Barthel-Steer	Electronic Theatre Controls, Inc	O	MP
Paul Beasley	Walt Disney Company	P	U
Robert Bell	Acuity Brands Inc.	A	MP
Marcus Bengtsson	disguise	P	MP
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	Kino Flo, Inc.	A	MP
Pete Borchetta	Altman Lighting	P	MP
Brent Boulnois	Candela Controls, Inc.	A	DE
Justyn Butler	JBOTS	O	CP
John David (Javid) Butler	Moda Light	P	MP
Ian Campbell	Doug Fleenor Design, Inc.	A	MP
Jean-Francois Canuel	A.C. Lighting Ltd.	O	CP
Steve Carlson	High Speed Design, Inc.	O	MP

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
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
Edward R. Condit	Edward R. Condit	O	G
Gareth Conner	Creative Conners, Inc.	O	MP
Fraser Connolly	Obsidian Controls	O	DE
Chris Conti	PRG	O	DR
Milton Davis	Doug Fleenor Design, Inc.	P	MP
Jeremy Day	Lumenpulse Group	O	MP
Steve Denim	Electronic Theatre Controls, Inc.	O	MP
Larry Dew	W.A. Benjamin Electric Co.	O	DE
Matthew Dews	Electronic Theatre Controls, Inc	O	MP
Matt Didon	ON LX Limited	P	CP
Rich Dionne	Purdue University	O	DE
Tucker Downs	Tucker Downs	O	G
Hamish Dumbreck	James Embedded Systems Engineering	O	MP
James Eade	ABTT	O	G
Bill Ellis	Candela Controls, Inc.	P	DE
Paul K. Ericson	Stantec	O	DE
Trevor Forrest	Helvar Lighting Control	O	MP
Mike Garl	Mike Garl Consulting LLC	exf	
Robert Goddard	Goddard Design Co.	P	MP

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
Nicolas Goerg	Rosco Laboratories	O	CP
Sean Goossen	LiteGear, Inc.	O	MP
Jerry Gorrell	Theatre Safety Programs	O	G
Erin Grabe	ESTA	exf	G
Matt Halberstadt	Electronic Theatre Controls, Inc	O	MP
Sean Harding	Port Lighting Systems	O	G
Nick Harper	Nick Harper	O	G
Robert Haycock	UC Berkeley	O	U
Mitch Hefter	USITT	P	U
Bill Hewlett	ImageCue LLC	O	MP
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Jon Hole	Eaton	P	MP
Maurits van der Hoorn	Acuity Brands Inc.	A	MP
Wayne David Howell	Artistic Licence Holdings	P	DE
John Huntington	I.A.T.S.E. Local 1	A	U
Leroy "Tripp" Oliver, III	Mainstage Theatrical Supply, Inc.	P	DR
Rob Johnston	Interactive Technologies, Inc.	O	MP
John Valus Jr.	Lex TM3	P	CP
David Kane	I.A.T.S.E. Local 728	A	U
Michael Karlsson	LumenRadio AB	P	MP
Sam Kearney	Electronic Theatre Controls, Inc.	P	MP
Jonathan Kemble	Electronic Theatre Controls, Inc.	O	MP
Christopher Kennedy	Chauvet Lighting	O	MP

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
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	P	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
Kevin Loewen	Acuity Brands Inc.	P	MP
Jim Love	Tait Towers Manufacturing LLC	P	MP
Rob Love	Insight Lighting	O	MP
Vangelis Manolis	AtlaBase Ltd.	O	CP
David McCulloch	David McCulloch	O	U
Bill McIntyre	Show Distribution Group, Inc.	P	CP
John Mehlretter	Lehigh Electric Products Co.	O	MP
David G. Meschisen	Lumenpulse Group	O	MP
Daniel Murfin	Royal National Theatre	P	U
John Musarra	John Musarra	O	U
Simon Newton	Open Lighting Project	P	G
Maya Nigrosh	Sonos	P	MP

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
Richard J. Nix	ESTA	exf	G
Jim Ohrberg	Candela Controls, Inc.	A	DE
Jaxon Patterson	Insight Lighting	O	MP
Soren Sterdorff Peglau	Brother, Brother and Sons	O	MP
Jason Potterf	Cisco	P	MP
Mark Primrose	Kino Flo, Inc.	P	MP
Gary Pritchard	LSC Lighting Systems PTY Ltd	O	MP
Charles Reese	Production Resource Group	O	DR
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
Nicolai Gubi Schmidt	Nicolai Gubi Schmidt	O	U
Larry Schoeneman	Larry Schoeneman	I	DE
Ford Sellers	Chauvet Lighting	O	MP
Shawn Silverman	Lighting Infusion LLC	P	DE
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
Tracy Underhill	Triple C Lighting & Controls	O	G
Carlo Venturati	Clay Paky S.P.A.	O	MP
Will Wagner	Carallon Ltd.	O	MP

Control Protocols Working Group members as of 24 February 2020

Delegate	Representing	Voting status	Int. cat.
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
David Yellin	Sumolight GmbH	O	MP
Jeong Sik Yoo	Ghost LX	O	DE

Voting Status

Principal and alternate working group members (**P & A**) are representatives of the same organization or company on a working group. A voting organization has one principal member and only one vote, regardless of the number of principal and alternate members representing the same organization. An organization may have as many alternate members as it desires. An alternate may vote in place of a principal, but an organization or company has only one vote.

Individual (I) working group members are persons of special expertise who are not affiliated with an organization or company having an interest in the work of the group. Each Individual working group member has one vote. An individual member may not have alternates.

An **observer** member (**O**) is a non-voting member. He or she may not vote, but may participate in discussions at working group meetings or submit written comments on the activities of a working group to a working group.

Interest category

Custom-market producer (CP): a producer of goods in which more than 50% of its product lines are designed and manufactured for specific customers to meet specifications provided by those customers and in which the products provided to different customers are substantially different. The proportion of the product line shall be determined by the relative monetary values of the products at the wholesale level.

Mass-market producer (MP): a producer of goods in which more than 50% of the product line is uniform products, designed and manufactured for non-specific customers without modification for any particular customer. The proportion of the product line shall be determined by the relative monetary values of the products at the wholesale level.

Dealer or rental business (DR): a company whose major business (more than 50%) is in the reselling or renting of products from several manufacturers to the company's customers.

User (U): a person or company that uses the products that are the subject of a working group, and for whom this use results in a net income that is

greater than any income derived from making, selling, or renting the subject products to others. Users for the purposes of this clause shall include educators and product end-users.

General interest (G): a party that is affected by the work of the group but that may not reasonably be considered a custom-market producer, a dealer or rental business, a mass-market producer, or a user of the products that are the subject of the working group. Examples are companies that do such a variety of business in a subject area that no one thing (renting or manufacturing, for example) could be considered over 50% of the business.

Designer (DE): a company or person that incorporates the products and services regulated by ESTA standards in their work but is not involved in the production, sale, or distribution of the actual products, nor is regularly employed by those who are involved in the production, sale, or distribution of the actual products.