

Minutes
Control Protocols Working Group
14 April 2021
via WebEx

Presiding chairperson: Michael Lay; Candela Controls, Inc; A; DR

Recording secretaries: Richard Nix & Karl Ruling; ESTA

Members attendance:

Ali Alnajjar; Carallon Ltd.; P; MP
Benjamin Eagen Arrigo; Benjamin Eagen Arrigo; O; U
Bill Ellis; Candela Controls, Inc.; P; DR
Daniel Murfin; Royal National Theatre; P; U
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Eric Bloom; Westview Productions; P; DR
Gary Douglas; Phospec Industries, Inc.; P; MP
Hans Lau; I.A.T.S.E. Local 728; P; U
Jason Potterf; Cisco; P; MP
Jeremy Powell; Vectorworks, Inc; P; CP
Jim Love; Tait Towers Manufacturing LLC; P; MP
John David (Javid) Butler; HDR Consulting LLC; P; DE
John Huntington; I.A.T.S.E. Local 1; A; U
John Valus Jr.; Lex TM3; P; CP
Jon Hole; Signify; P; MP
Jonathan Kemble; Jonathan Kemble; I; G
Kevin Loewen; Acuity Brands Inc.; P; MP
Kevin Matz; Company 235, LLC; O; U
Leroy "Tripp" Oliver, III; Mainstage Theatrical Supply, Inc.; P; DR
Matt Didon; ON LX Limited; P; CP
Matt Halberstadt; Electronic Theatre Controls, Inc; O; MP
Matthew Ardine; I.A.T.S.E. Local 728; A; U
Maya Nigrosh; Sonos; P; MP
Michael Lay; Candela Controls, Inc; A; DR
Michael Lichter; Electronic Theatre Controls, Inc.; A; MP
Mitch Hefter; USITT; P; U
Paul Beasley; Walt Disney Company; P; U
Paul K. Ericson; Stantec; O; DE
Paul Kleissler; City Theatrical, Inc.; P; MP
Quinten James; QtoCue Lighting Design; O; U
Richard Thompson; Electronic Theatre Controls, Inc; O; MP
Robert Goddard; Goddard Design Co.; P; MP
Sam Kearney; Electronic Theatre Controls, Inc.; P; MP
Scott M. Blair; Megapixel; P; CP
Shawn Silverman; Lighting Infusion LLC; P; DE
Simon Newton; Open Lighting Project; P; G
Stijn Geysen; Luminex Lighting Control Equipment; P; MP
Tucker Downs; Tucker Downs; O; G
Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH; P; U
Vangelis Manolis; AtlaBase Ltd.; O; CP
Will Wagner; Carallon Ltd.; O; MP

1 Opening remarks

Michael Lay called the meeting to order at 11:03. He put the URL address to the documents file in the chat window. He thanked people for attending, asked people to identify themselves when speaking, and asked people to mute their microphones when not speaking.

2 Anti-trust and patent statements

2.1 Reading of the anti-trust statement

Michael Lay 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.

Karl Ruling displayed one of the easy-to-read pamphlets to his webcam so attendees could see it.

2.2 Reading of the call for patents

Michael Lay 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.

Hans Lau brought up a trade mark on “Remote Device Management” by Amscreen, a UK outdoor signage manufacturer. (<https://www.amscreen.com/what-we-do/end-to-end-service/remote-device-management/>) There was discussion, with the consensus being that we should do something to protect the term for the users of our standards. Michael Lay said he would bring it up with the TSC.

3 Attendance and Membership

3.1 Requirements for membership

Michael Lay read the following statement aloud to the assembly:

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

Richard Nix noted that some had not paid from last year. What to do with them will be taken up at the next TSC meeting. Michael Lay urged people to pay their fees.

3.2 Introduction of attendees

Michael Lay read off the names of the people on the screen, and they introduced themselves.

3.3 Determination of a quorum

Michael Lay asked for a show of virtual hands of voters. Richard Nix confirmed that a majority of the voting body was present, more than enough for a quorum and to pass a motion needing a supermajority vote of approval.

3.4 Processing of new membership and status change requests

3.4.1 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:

Pete Borchetta; Altman Lighting; P; MP—Not present.

Leroy “Tripp” Oliver, III; Mainstage Theatrical Supply; P; DR—Present.

Jon Hole; Signify; P; MP —Present.

Michael Lay said that Pete Borchetta would be moved to observer status at end of meeting if he is absent for the duration. (He was moved to observer status.)

3.4.2 New applications

As of 25 March the following applications had been received:

Ali Alnajjar; Carallon Ltd.; Principal; MP

Quinten James; QtoCue Lighting Design; Observer; U

Jeremy Powell, Vectorworks; (change from observer to voting member)

Scott Blair moved that the applications be accepted. The motion was seconded. The motion was approved unanimously with no abstentions.

3.5 Consensus body during this 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
Bill Ellis	Candela Controls, Inc.	P	DR
Brent Boulnois	Candela Controls, Inc.	A	DR
Jim Ohrberg	Candela Controls, Inc.	A	DR
Michael Lay	Candela Controls, Inc	A	DR
Ali Alnajjar	Carallon Ltd.	P	MP
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
Sam Kearney	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
John David (Javid) Butler	HDR Consulting LLC	P	DE

Delegate	Representing	Voting status	Int. cat.
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
Jonathan Kemble	Jonathan Kemble	I	G
Mark Primrose	Kino Flo, Inc.	P	MP
Jim Bogdanowicz	Kino Flo, Inc.	A	MP
John Valus Jr.	Lex TM3	P	CP
Shawn Silverman	Lighting Infusion LLC	P	DE
Michael Karlsson	LumenRadio AB	P	MP
Stijn Geysen	Luminex Lighting Control Equipment	P	MP
Rene Berhorst	MA Lighting	P	MP
Leroy "Tripp" Oliver, III	Mainstage Theatrical Supply, Inc.	P	DR
Scott M. Blair	Megapixel	P	CP
Matt Didon	ON LX Limited	P	CP
Simon Newton	Open Lighting Project	P	G
Gary Douglas	Phospec Industries, Inc.	P	MP
Daniel Murfin	Royal National Theatre	P	U
Bill McIntyre	Show Distribution Group, Inc.	P	CP
Jon Hole	Signify	P	MP
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
Jeremy Powell	Vectorworks, Inc.	P	CP
Paul Beasley	Walt Disney Company	P	U
Eric Bloom	Westview Productions	P	DR

Total votes possible	37	
Interest categories subtotals	6	CP
	3	DE
	3	DR
	2	G
	17	MP
	6	U

Voting Status key: P = Principal voter, A = Alternate voter, I = Individual voter
Interest Category key: MP = Mass-market producer, CP = Custom-market producer,
DR= Dealer or rental company, U = User, G = General interest, DE = Designer

4 Approval of the minutes from the last meeting

See *CPmin01-2021_DRAFT.pdf*

Mitch Hefter moved to approve the draft minutes as written. The motion was seconded. The motion was approved unanimously with no abstentions.

5 Approval of agenda

Scott Blair moved to approve the agenda. The motion was seconded. The motion was approved unanimously with no abstentions.

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 (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 (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 withdrawal by 04 May 2024)

*ANSI E1.59 – 2021, Object Transform Protocol (Published 28 January 2021, Revision, reaffirmation or withdrawal by 19 January 2026)

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

Wayne Howell/Scott Blair: *progress report*. Reflectors: e1.20@esta.org, rdmtg_standards@esta.org

See [BSR_E1-20_201x-6_016.pdf](#), [BSR_E1-20_201x-6_016_dif.pdf](#), and the [new E120PR2-002_22March2021_DraftResolutions.xlsx](#). See [BSR_E1-20_PR2_CmmntSmmry.pdf](#) for the commenters' names and identification of the draft standard that was offered for public review.

Scott Blair said that Wayne Howell is not able to attend, so he will present the report. Blair moved that the draft resolutions be approved. The motion was seconded. Sam Kearney said that the resolutions are now much better than before, and thanked the task group members for their work. Bob Goddard abstained. There was no opposition. The motion carried with the required supermajority.

Scott Blair moved that the revised draft be offered for public review. The motion was seconded. The motion was approved unanimously with no abstentions.

6.3 ANSI E1.37-2 - 2015, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages, reaffirmation project

Reflector: e137@esta.org, a general E1.37-x reflector.

There are two actions related to the reaffirmation of ANSI E1.37-2 in 6.3.1 and 6.3.2.

6.3.1 Letter ballot report

See *FINAL_CPWG_E1-37-2_BallotResults_CP_2020-1011r3.pdf*.

The motion carried with the required supermajority over a few No votes.

6.3.2 Approval of resolutions to public review comments

See *E1-37-2_pub_revw_Resolutions.pdf*.

Scott Blair moved to accept the resolutions to the public review comments. The motion was seconded. The motion was approved unanimously with no abstentions. The comment resolutions were approved and will be sent to the commenter.

6.4 Reaffirmations of ANSI E1.3, ANSI E1.27-1, ANSI E1.30-1, and ANSI E1.30-4

6.4.1 Public reviews

The documents are in public review through April 19.

6.4.2 Working group letter ballots.

Letter ballots for the reaffirmations are open until April 20. Voting members were reminded by Karl Ruling that they are required to vote on letter ballots. Failure to vote on three consecutive letter ballots will result in the loss of voting status.

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

Reflector: e137@esta.org, a general E1.37-x reflector.

The last public review ended 9 April 2018. Peter Willis is the task group leader. Comment resolution progress report.

Michael Lay asked if anyone wanted to reach out to Willis to see if this could be restarted or can help by becoming a co-leader.

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

Scott Blair/Simon Newton. Reflector: e137@esta.org, a general E1.37-x reflector.

Comment resolutions. See E1-37-5 General Purpose PIDs 2020-12-27.pdf and E1-37-5_CP_2020-1019 by Comment #.pdf.

Scott Blair moved to approve the comment resolutions. The motion was seconded. There was no opposition, but there was one abstention from Bob Goddard. The motion carried with the required supermajority.

Scott Blair moved to offer the revised draft for public review. The motion was seconded. Blair said this document was more awesome than the revised draft E1.20. The motion carried with no opposition and no abstentions.

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

Scott Blair/Dan Murfin Progress report? Call for task group members.

Scott Blair asked for an email reflector. He said there is a task group meeting tomorrow. Lay suggested that Scott Blair send him a list of people to be on the task group after tomorrow's meeting. He will approve the list and send it to Karl Ruling and Richard Nix to set up the reflector.

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

Javid Butler/Wayne Howell. Reflector: ProtocolsCompliance@esta.org.

Progress report.

Javid Butler said the task group should have a draft document by July. He offered thanks to the task group and the excellent input from the working group members who offered internal review.

Michael Lay also extended thanks to Maya Nigrosh for her extensive input.

Bob Goddard thanked Javid Butler for his willingness to take on the task. He also thanked Maya Nigrosh for her contributions.

6.9 BSR E1.63 Network Advertisement of Entertainment Protocols

Jason Potterf/Kevin Loewen. Reflector: NAEP@esta.org

Progress report.

Jason Potterf reported little progress; the effort has been put on the other Next Gen projects.

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

Dan Murfin/Sam Kearney: progress report. Reflector: NextGenLibrary@esta.org

Dan Murfin reported that they have been working on the project and making changes to the model. The task group had a target of July for a public review document, but that is unlikely. Sam Kearney agreed that a document by July is unlikely, but he, Dan Murfin, and Michael Lay all said that a lot of work was being done. The task group is meeting weekly.

6.11 Next Gen Study Group (Overall)

Jason Potterf/Maya Nigrosh: progress report. Reflector: nextgencontrolprotocol@esta.org

This is a coordination project, said Potterf. There was no other news or action.

6.12 Next Gen Transport study group

Jason Potterf/Maya Nigrosh: progress report. Reflector: NextGenTransport@esta.org

Jason Potterf reported that the library needs are driving the transport model, but that it is a reiterative process, with transport feeding back to the library project.

Potterf reported they have been using a private SharePoint for sharing files. The task group has also established a private Discord server for text messaging discussions. The Discord Server and the SharePoint site can be extended to other task groups who would like to use these services for their projects. Log in credentials for SharePoint and Discord are available upon request for any CPWG member. Michael Lay noted that these services are really helping productivity, and reminded members that these private tools are not officially sanctioned resources being provided by ESTA.

6.13 Protocol Security study group

Kevin Loewen/Paul Beasley: progress report. Reflector: CPWG_Secure@esta.org

Kevin Loewen reported that he now has support from his employer to allocate time for this, so it will be making progress.

6.14 GitHub study group

Jason Potterf. Reflector: CPWG_github_study@esta.org. Progress report

Jason Potterf reported that his task groups have moved to GitLab for sharing libraries. GitHub had limits. The use case isn't quite there yet. The use case was assumed to be E1.37-5, but they realized they couldn't put text

in an American National Standard, but have “the latest version” of that text be in GitHub.

6.15 IEEE report on single-pair Ethernet

Jason Potterf to report on IEEE 802.3cg progress.

Potterf reported that there are some good things going on. Some work is being done to correct some things (removing unnecessary rules) that were blocks to time synchronization.

802.3cg is coming to market, with products popping up that offer distances of 1 km at 10 megabits/second speed.

The 802.3da group is working on a multi-drop version offering power and data over the network with at least 16 nodes. It could use existing DMX512 cable topology. It can deliver 90 watts, which would be enough perhaps to run diagnostics and set up software on a stage/studio luminaire. Potterf said he's pushing for 32 nodes on a branch, which would make it comparable to DMX512.

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

Scott Blair/Sam Kearney: errata sheet progress report. Reflector: e133@esta.org

Scott Blair reported that he had sent out a rough draft for informal review but had not received any feedback yet. Michael Lay asked if he would have an errata list ready in time for July's meeting. Scott said he would do so.

6.17 ANSI E1.59 - 2021, Object Transform Protocol

Reflector: e159@esta.org

Michael Lay encouraged people to read Dan Murfin's story about E1.59 in the current issue of Protocol.

Murfin pointed out the OTP protocol website with resources for people trying to implement E1.59.

Dan Murfin moved to reopen the standard for revision to add camera modules. The motion was seconded. There was discussion about why this is important, and if such an action would cause scope creep. Maya Nigrosh said this is exactly the type of growth the task group anticipated during development of the standard, but they just did not think it would happen so quickly. She also said they have a need for participants from the camera industry. Karl Ruling mentioned the PERG constituency.

The motion carried without objection. Paul Beasley abstained. A new project PINS form will be filed with ANSI.

6.18 Task group leader coordination

*Scott Blair is the official scheduling liaison for meetings between the CPWG task groups and meeting schedulers. Frances Thompson 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 E1.37-2: Simon Newton

BSR E1.37-4: Peter Willis

BSR E1.37-5: Scott Blair and Simon Newton

BSR E1.37-6: Simon Newton

BSR E1.37-8 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

No news or action.

7 New business

7.1 CPWG Webex Roundtables in 2021

Michael Lay asked for volunteers and topics. This would be a public WebEx event. We are not doing any plugfests this year. He asked people with ideas to send those ideas to him via email.

Scott Blair described what has been done for roundtables in the past.

7.2 ANSI audit results

Richard Nix described audit the process and the slight changes made to ESTA's P&P.

7.3 NAMM Education Report

Michael Lay reported 3,507 attendees overall at the ESTA sessions. Frances Thompson had asked Michael to extend thanks to all presenters, which he did. NAMM and ESTA staff were all pleased with the outstanding turnout.

7.4 Other new business

8 Other business and announcements

8.1 National Electrical Code (NEC) update

Jason Potterf and Mitch Hefter.

Mitch Hefter reported that the responses to the initial proposals will be published for public comment on July 2. However, this public comment period will be short, only a month. Part of the revisions that can be commented on is a major rewrite of Article 530—a rewrite that was proposed by a motion picture industry headed by Alan Rowe.

Hefter also pointed out two Tentative Interim Amendments proposed by Steve Terry to undo changes made in the 2020 code that would affect the listing of high-density dimmer racks and relay racks: TIA 1573, and TIA 1574. People were encouraged to support them. He also said that there are new requirements for emergency lighting in Article 700, which may complicate emergency lighting systems, particularly PoE systems. He suggested we comment on it.

Panel 18 did not approval any problematic proposals, reported Potterf, but he echoed that there is problem with the emergency lighting proposals in Article 700.

Mitch said interested parties can go to nfpa.org/70next to see all the actions reported here. A registration might be required, but access is free.

Hans Lau asked if reminders would be sent about the NFPA public comment period. Karl Ruling said that the notice will be published in *Standards Watch* (<https://tsp.esta.org/tsp/StandardsWatch/TodaySwatch.pdf>).

8.2 Illuminating Engineering Society update

Bill Ellis and Mitch Hefter.

Bill Ellis reported that the museum committee is doing research on material deterioration related to exposure to light. He also said he'd not heard anything from the TTFL (Theater, Television and Film Lighting) committee. Control Protocols got together for the first time in a couple of years. He reported that a lot of time in the committee meetings had been spent on liaison reports.

Mitch Hefter reported that the *IESNA Lighting Handbook* is no more. It's been replaced by the on-line library, which requires a subscription for access. [IES Members pay \$400 for an annual subscription in addition to membership dues; non-members pay \$800.] Work is being done on a recommended practice for control and intent narratives.

8.3 Plugfests

8.3.1 Europe

No news.

8.3.2 USA

No news.

In general, people expressed a desire to have plugfests again. The events are missed.

8.4 Above & Beyond Awards

Michael Lay noted that information on the Above & Beyond Awards is available at http://tsp.esta.org/tsp/news/award_recipients.html.

8.5 USITT Conference

Mitch Hefter reported that the next USITT Conference is scheduled for 2-5 March 2022. It will be held in-person in Baltimore.

9 Schedule for future meetings

The meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>. The next CPWG meeting is scheduled for 11:00, Tuesday 27 July 2021. Michael Lay said invitations will be sent as soon as the membership database is updated.

10 Adjournment

Having reached the end of the agenda, Michael Lay declared the meeting adjourned at 13:00.

Email reflector lists as of 22 April 2021:

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Control Protocols Working Group members and contact information as of 21 April 2021

Delegate	Representation	Voting status	Int. cat.
Cameron Affleck	Cameron Affleck	O	U
Christian Allabauer	Christian Allabauer	O	G
Ali Alnajjar	Carallon Ltd.	P	MP
Matthew Ardine	I.A.T.S.E. Local 728	A	U
Benjamin Eagen Arrigo	Benjamin Eagen Arrigo	O	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	O	MP
Brent Boulnois	Candela Controls, Inc.	A	DR
Justyn Butler	JBOTS	O	CP
John David (Javid) Butler	HDR Consulting LLC	P	DE

Control Protocols Working Group members and contact information as of 21 April 2021

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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
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
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
Gary Douglas	Phospec Industries, Inc.	P	MP
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	DR
Paul K. Ericson	Stantec	O	DE

Control Protocols Working Group members and contact information as of 21 April 2021

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Trevor Forrest	Helvar Lighting Control	O	MP
Mike Garl	Mike Garl Consulting LLC	exf	
Stijn Geysen	Luminex Lighting Control Equipment	P	MP
Robert Goddard	Goddard Design Co.	P	MP
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
Julian Hoare	Tait Towers Manufacturing LLC	A	MP
Jon Hole	Signify	P	MP
Maurits van der Hoorn	Acuity Brands Inc.	A	MP
Wayne David Howell	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
Quinten James	QtoCue Lighting Design	O	U
Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	O	MP
David Kane	I.A.T.S.E. Local 728	A	U

Control Protocols Working Group members and contact information as of 21 April 2021

Delegate	Representation	Voting status	Int. cat.
Michael Karlsson	LumenRadio AB	P	MP
Sam Kearney	Electronic Theatre Controls, Inc.	P	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 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
Kevin Matz	Company 235, LLC	O	U
David McCulloch	David McCulloch	O	U
Bill McIntyre	Show Distribution Group, Inc.	P	CP
John Mehlretter	Lehigh Electric Products Co.	O	MP

Control Protocols Working Group members and contact information as of 21 April 2021

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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
Richard J. Nix	ESTA	exf	G
Jim Ohrberg	Candela Controls, Inc.	A	DR
Jaxon Patterson	Insight Lighting	O	MP
Soren Sterdorff Peglau	Brother, Brother and Sons	O	MP
Jason Potterf	Cisco	P	MP
Jeremy Powell	Vectorworks, Inc	P	CP
Mark Primrose	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
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

Control Protocols Working Group members and contact information as of 21 April 2021

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Robert Timmerman	Signify	O	MP
Tracy Underhill	Triple C Lighting & Controls	O	G
John Valus Jr.	Lex TM3	P	CP
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
David Yellin	Sumolight GmbH	O	MP
Jeong Sik Yoo	Ghost LX	O	DE

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

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