

Minutes
Control Protocols Working Group

Thursday, 19 March 2015

09:04 to 11:21

Hilton Netherland Plaza

Cincinnati, OH

Presiding co-chairs:

Michael Lay; Philips Color Kinetics; Royal Philips; P; MP
Kimberly Corbett Oates; Schuler Shook; P; DE

Recording secretaries:

Erin Grabe; PLASA NA; exf; G
Karl G. Ruling; PLASA NA; exf; G

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
Ian Campbell; Doug Fleener Design, Inc.; A; MP*
Casey Diers; DesignLab Chicago, Inc.; A; DR
Bill Ellis; Candela Controls, Inc.; P; DE*
Robert Goddard; Goddard Design Co.; P; MP*
Mitch Hefter; USITT; P; U
Bill Hewlett; Hewlett Electronics; O; CP*
John Huntington; City Tech, Ent Tech Department; I.A.T.S.E. Local 1; A; U
Eric Johnson; O; G
Tyrone Mellon, Jr.; Lex Products Corp.; P; CP
Peter Kirkup; LumenRadio AB; A; MP*
Paul Kleissler; City Theatrical, Inc.; P; MP
Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH; DIN, NVBF Committee; P; U*
Roger Lattin; I.A.T.S.E. Local 728; P; U
Kevin Loewen; Pathway Connectivity Inc.; Acuity Brands Inc.; P; MP
Joshua Moyerman; Stellascapes.com; A; MP*
John Musarra; O; U
Simon Newton; Open Lighting Project; P; G
Maya Nigrosh; Electronic Theatre Controls, Inc.; A; MP
Larry Schoeneman; DesignLab Chicago, Inc.; P; DR
Sean Sill; Open Lighting Project; O; G
Dane Styczynski; Dept. Of Theatre and Drama; University of Wisconsin - Madison; A; DE
Ken Vannice; Ken Vannice LLC; I; G
Peter Willis; Howard Eaton Lighting Ltd.; P; CP*
* Attending via WebEx

1 Opening remarks

Michael Lay called the meeting to order at 09:04 by welcoming everyone.

2 Attendance

2.1 Introductions of those present and circulation of attendance sheet

A bright orange sign-in sheet was circulated clockwise as self-introductions took place. Those participating by WebEx were noted on the sheet by a secretary.

2.2 Determination of a quorum

By counting a show of raised hands, Michael Lay determined that a quorum was present.

2.3 Recognition of alternate voting members

The following Alternates voting in place of their Principals were recognized by Michael Lay:

John Huntington; IATSE Local 1; A; U
Peter Kirkup; LumenRadio AB; A; MP
Ian Campbell; Doug Fleenor Design; A; MP
Josh Moyerman; Stellascapes; A; MP

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. 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

No voters were in jeopardy of a change in status to observer due to lack of attendance.

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

As of 26 February 2015, the following application was received and logged:

Jeremy Day; Lumenpulse Lighting Inc.; O; MP

Mitch Hefter moved to approve the new application. The motion was seconded and approved by a show of hands and voice votes from those on WebEx.

3.4 Consensus body

The full consensus body of this working group at the time of this meeting, including those not present, was:

Name	Representing	Voting status	Interest category
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
Bill Ellis	Candela Controls, Inc.	P	DE
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Harrison Hohnholt	City Theatrical, Inc.	A	MP
Andrew Nikel	City Theatrical, Inc.	A	MP
Larry Schoeneman	DesignLab Chicago, Inc.	P	DR
Casey Diers	DesignLab Chicago, Inc.	A	DR
Ulrich Kunkel	DIN, NVBF Committee	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	A	MP

Name	Representing	Voting status	Interest category
Ian Campbell	Doug Fleenor Design, Inc.	A	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	A	MP
Edward A. (Ted) Paget	Electronic Theatre Controls, Inc.	A	MP
Sang-Kyu Lim	Electronics and Telecommunications Research Institute	P	G
Hyun Jong Kim	Electronics and Telecommunications Research Institute	A	G
Il Soon JANG	Electronics and Telecommunications Research Institute	A	G
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
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
Dennis Grow	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Ken Vannice	Ken Vannice LLC	I	G
Tyrone Mellon_Jr.	Lex Products Corp.	P	CP
Joshua Liposky	Lex Products Corp.	A	CP
Michael Karlsson	LumenRadio AB	P	MP
Marcus Bengtsson	LumenRadio AB	A	MP
Hans Lau	LumenRadio AB	A	MP
Peter Kirkup	LumenRadio AB	A	MP
Simon Newton	Open Lighting Project	P	G
Peter Newman	Open Lighting Project	A	G
Charles Reese	Production Resource Group	P	DR
Michael Lay	Royal Philips	P	MP
Kimberly Corbett Oates	Schuler Shook	P	DE
Eckart Steffens	Soundlight, the DMX Company	P	CP
Andrew Frazer	Stellascapes.com	P	MP
Joshua Moyerman	Stellascapes.com	A	MP
Dan Lisowski	University of Wisconsin - Madison	P	DE
Dane Styczynski	University of Wisconsin - Madison	A	DE

Name	Representing	Voting status	Interest category
Mitch Hefter	USITT	P	U
Paul Beasley	Walt Disney Company	P	U
Randy L. Fox	Walt Disney Company	A	U
Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter			
Votes by Interest Category:			
Custom-market producer		CP	3
Designer		DE	3
Dealer or rental company		DR	3
General interest		G	3
Mass-market producer		MP	9
User		U	5
Total votes possible:			26

4 Approval of the minutes from the previous meeting

See *CPmin01-2015.pdf*.

Simon Newton requested a change to 10.4, "...a session on the Open Lighting Project," not protocols.

Scott Blair moved to approve the minutes of the January meeting as amended. The motion was seconded and approved by a show of hands and voice votes, with four abstentions.

5 Patents

5.1 Reading of the call for patents

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

PLASA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. PLASA uses a process of open patent and copyright disclosures to implement its intent. PLASA 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 or 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:

PLASA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all PLASA 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 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 PLASA meeting, please bring your concern to PLASA management. An easy to read pamphlet describing the antitrust laws is available from the PLASA staff.

Erin Grabe held up the pamphlet. Nothing was revealed.

7 Approval of agenda

Michael lay added two items: 9.3 Plugfest and Task Group meeting balance, and 9.4 PLASA Fundraising.

Dane Styczynski added item 9.5 A presentation on sACN

Scott Blair moved to approve the agenda as amended. The motion was seconded and approved by a unanimous show of hands and voice votes in favor of the motion.

8 Old business

8.1 Standards, Guides & Recommended Practice Maintenance

Any news or action needed on any of the following documents? This is a placeholder in the agenda, so we don't forget to maintain them. Documents prefaced with an asterisk (*) are on the agenda for discussion.

ANSI E1.3 – 2001 (R2011), 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 2016)

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 2018)

* ANSI E1.17 – 2010 Entertainment Technology - Architecture for Control Networks (ACN) (Revision, reaffirmation, or withdrawal by 2015)

* ANSI E1.20 - 2010, Remote Device Management over USITT DMX512. (Revision, reaffirmation or withdrawal by 2016)

ANSI E1.27-1 – 2006 (R2011), Entertainment Technology - Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products. (Revision, reaffirmation or withdrawal by 2016)

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 2019)

ANSI E1.30-1 - 2010, EPI 23, Device Identification Subdevice. (Revision, reaffirmation or withdrawal by 2016)

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

* ANSI E1.30-4 – 2010, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. (Revision, reaffirmation, or withdrawal by 2015)

* ANSI E1.30-7 – 2009, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts. (Revision, reaffirmation, or withdrawal by 2014)

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

* ANSI E1.31, Lightweight streaming protocol for transport of DMX512 using ACN (Revision, reaffirmation, or withdrawal by 2014)

ANSI E1.37-1 - 2012, Additional Message Sets for ANSI E1.20, Remote Device Management. (Revision, reaffirmation, or withdrawal by 2017)

* ANSI E1.37-2 - 2014, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages. (Revision, reaffirmation, or withdrawal by 2019)

* ANSI E1.45-2013, Unidirectional Transport of IEEE 802 data frames over ANSI E1.11 (DMX512-A) (Revision, reaffirmation, or withdrawal by 2018)

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

8.2 BSR E1.17 - 20x, Architecture for Control Networks

Maya Nigrosh moved that the document be accepted as an American National Standard. The motion was seconded and will be decided by letter ballot.

8.3 E1.20 improvements

Peter Kirkup said that the task group plans to meet Tuesday [24 March] next week by WebEx.

8.3 ANSI E1.30-4 – 2010, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices

The letter ballot period has been extended by two weeks to recirculate Simon Newton's comments. The group consensus was that changes would be editorial in nature, including address changes akin to a change in physical address.

8.4 BSR E1.30-7 – 2009 (R201x), EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts

Scott Blair pointed out that Kevin Loewen is in charge of the changes. Kevin Loewen said he has not drafted anything to share with the group, but that he hopes to have something to distribute prior to the summer meetings.

8.5 BSR E1.30-11, EPI 33

Simon Newton reported that this project is still in a holding pattern, awaiting action on BSR E1.33.

8.6 BSR E1.31 with Universe Synchronization and Universe Discovery

Maya Nigrosh reported that the task group meets tomorrow [20 March 2015]. She also reported that resolutions to comments from the last public review have been drafted, but work on the draft standard is still needed. Documents for this group to consider will likely be distributed for the July meeting.

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

Simon Newton reported that more of the configuration settings have to be done manually. Automating them is possible. The protocol becomes very complicated, but still useful for untrained people.

Peter Willis asked if a one-page summary of the draft could be made available for the April EU Plugfest. Bob Goddard agreed that a one-page summary was a good idea, and asked that it be shared with the working group at large.

8.8 BSR E1.37-2 - 20xx, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages

See *E1-37-2_2014withErrata.pdf* and *E1-37-2_Errata.pdf*.

Simon Newton moved to offer the revised draft, which includes the contents of the errata, for public review. The motion was seconded and approved by a unanimous show of hands and voice votes.

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

The current draft document was distributed to the task group through the reflector the previous evening [18 March]. Peter Willis would like to use PLASA's WebEx for one of the days during the Plugfest in April. He has emailed Frances Thompson for a Task Group meeting time for Dallas in July. Peter Willis noted that the size of the document was not small.

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

Simon Newton reported that the Task Group will be meeting to address the comments received from three commenters, whom are all CPWG members. He said that he hopes to have documents for this group to consider in July.

Peter Willis asked if there were any questions about his comments, since he will not be at the meeting, to which Simon Newton replied that at this time there were none. Bob Goddard asked Simon Newton if his comments had been received, to which Simon Newton replied that they had been.

There was then some discussion of START Code filtering, discovering manufacturer-specific PIDs, and what should be in E1.20 or here. Scott Blair felt strongly that this document was the right place for manufacturer-specific PIDs, so that they may be conceptualized on 485 and Ethernet. Simon Newton agreed, saying that the current plan was to keep the PIDs "on this train." A WebEx meeting was also requested for this task group work.

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

There is currently no news on this project, reported Scott Blair. He mentioned that VER is developing some PIDs internally and has been trying them out for feedback. He also said that he has been building a list of items as they come up, so that, when the group really gets started, it will be working from a base of practical experience. However, this work will not be done until BSR E1.33 is done, because without it, Scott Blair says that this document is nothing.

8.12 Withdrawal of ANSI E1.45-2013, Unidirectional Transport of IEEE 802 data frames over ANSI E1.11 (DMX512-A)

Karl Ruling reported that the voting period will be extended by two weeks, due to comments received by the working group on the letter ballot. He noted a majority of voters were in favor of withdrawal. There was some brief discussion of the vote and its progress. At the end of the ballot period [23 March], there will be a recirculation to allow voters to consider the comments and reasons offered during the initial ballot period.

[The working group took a 10 minute break.]

8.13 European Plugfest

Peter Willis reminded the group that the next European Plugfest will be 22-24 of April 2015 near the Gatwick Airport. To register, visit <http://www.plasa.org/rdm>. He reported that there are about a score of people already signed up, including some newcomers. Peter Willis added that discussion of problems when devices attempt to deal with subdevices would be likely.

8.15 Texas Plugfest

Scott Blair reminded the group that the next Plugfest in Texas will be 24 -27 July 2015, in conjunction with the July meetings. He noted that attendance last July was a bit low, due to overlapping task group meetings and lack of advance publicity. There was then some discussion of moving task group meetings out of the Plugfest times.

9 New business

9.1 Task group leader coordination

Maya Nigrosh asked that the contents of the E1.20 reflector be moved to the RDM_TG reflector, and that a pointer be put into the E1.20 reflector to point to the RDM_TG reflector.

Maya also asked that the contents of the E1.31 reflector be moved to the E1.31_Sync reflector, and that a pointer be put into the E1.31 reflector to point to the E1.31_Sync reflector.

Task group leaders were reported as follows:

- BSR E1.30-7 Kevin Loewen and Scott Blair
- BSR E1.30 No single leader; Generic group
- BSR E1.31 Maya Nigrosh
- BSR E1.37-4 Peter Willis
- BSR E1.20 Peter Kirkup
- 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-x Video Walls Scott Blair

9.2 CPWG leadership

Michael Lay remains co-chair through November 2016. Kimberly Corbett Oates' seat is up this year.

Kimberly Corbett Oates reported that she needs to switch some priorities around and would not be seeking re-election for another two-year term, however she will remain a working group member.

Karl Ruling asked the working group to write nominees down on paper. Nominees not wishing to run would be removed from the list, and then the list would be shared electronically with voters to rank candidates.

The nominees who agreed to be considered are as follows:

Ty Mellon, Simon Newton; Dan Antonuk; Roger Lattin; Scott Blair; Milton Davis; Paul Kleissler; and Maya Nigrosh.

Michael Lay expressed his personal gratitude for Kimberly's outstanding leadership abilities and ongoing commitment to the Technical Standards Program, which was followed by applause from the working group members.

9.3 Plugfest and task group meeting balance

Eric Johnson proposed moving lengthy sections to an online format, and reserve Dallas meetings for issues that require detailed attention by people in the room. Scott Blair added that resolving comments is a good place to cut out the face-to-face time.

The group consensus was that no evening task group meetings should be held, so that evenings can be reserved for Plugfest time.

Task groups known to need a meeting in July include: E1.20, E1.33, E1.37-4, E1.37-5, and E1.30-7. In an effort to better coordinate task group and Plugfest hours, Michael Lay asked Scott Blair to work with Frances Thompson on the meeting schedule, and that all Task Group meetings be scheduled through Scott Blair.

9.4 PLASA fund raising

Michael Lay reported that the Technical Standards Program is on track to run a \$40,000 deficit this year. He asked the group to consider a contribution, or to persuade their employers to make a contribution to keep this

program alive. He also requested that group members ask their employers to obtain (and consider) an insurance quote from ProSight Specialty Insurance, our key TSP sponsor.

9.5 Streaming ACN

Dane Styczynski suggested that E1.31 might be used to monitor the status of multiple stage scenery automation systems. The idea came out of his thesis work. He asked the group for comment on this idea. There was some discussion.

Dan Antonuk said he knows of at least one company that is using E1.31 for sending positional information. The streaming and redundant data itself provides the reliability.

Dane Styczynski noted that he plans to have a proposal for this group to consider by the next meeting.

10 Other business & announcements

10.1 Above & Beyond Awards

The nomination site is open year round at tsp.plasa.org/AboveandBeyond.

Scott Blair announced the first award winner, Eric Johnson, and noted how helpful Eric has been at Plugfests in providing valuable assistance to each and every attendee.

Simon Newton announced the second award winner, Jason Potterf, and noted his contributions and help to E1.33, the Plugfests, and our teleconferencing.

Michael Lay announced Larry Schoeneman's receipt of an Above and Beyond award from the Technical Standards Council for his work in fundraising for the Technical Standards Program.

10.2 PLASA DMX512/RDM Educational Kit - "Train the Trainer" Session

Bill Ellis had dropped off the meeting, so there was no further update given at this time.

10.3 TSP sessions at USITT 2015

Kimberly Corbett Oates asked that members send her submissions for USITT 2016.

10.4 TSP sessions at LDI 2015

Michael Lay mentioned that Simon Newton was doing a session on the Open Lighting Project.

Scott Blair asked if a session on the new features in E1.31 was good, and Maya Nigrosh agreed.

Maya Nigrosh and Peter Willis have done a "Cool stuff" demo, which Maya Nigrosh would like to do again. Kimberly Corbett Oates asked if Maya Nigrosh would do this at USITT 2016, and she agreed.

11 Next meeting

Michael Lay reported that the next meeting is scheduled for Saturday 25 July 2015, from 2:00 p.m. To 6:00 p.m., but that a request was being made to move it to the morning slot, 9:00 a.m. to 1:00 p.m.

Michael Lay also reminded the group that the July 2016 meetings are being held in conjunction with NATEAC at the Roosevelt Hotel in New York City, which runs from 14-18 July 2016.

It was noted that USITT 2016 is planned to be held in Salt Lake City, USITT 2017 is planned for St. Louis, and that USITT 2018 is planned for Fort Lauderdale.

Michael Lay told the group to check the website <http://na.plasa.org/news/meetings.php> for the latest information.

12 Adjournment

Scott Blair moved to adjourn the meeting. The motion was seconded. Hearing no objections, Michael Lay declared the meeting adjourned at 11:21.

Name	Company	Representing	Voting status	Int. cat.
Christian Allabauer	Lighting Innovations, Hermann Sorger GmbH	Lighting Innovations, Hermann Sorger GmbH	O	CP
Simon Alpert	Lighttech Event Technologies	Lighttech Event Technologies	O	CP
Klaus Amling	Licht-Technik	Licht-Technik	O	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Matthew Ardine	IATSE Local 728	IATSE Local 728	O	U
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
Marcus Bengtsson	LumenRadio AB	LumenRadio AB	A	MP
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	MP
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Stephen Bickford	T. Kondos Associates	T. Kondos Associates	O	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Scott M. Blair	Full Throttle Films/ VER	Full Throttle Films/ VER	P	DR
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
Ron Bonner	PLASA Technical Resources Office	PLASA EU	O	G
Stef Bressers	MagicFX B.V.	MagicFX B.V.	O	MP
André Broucke	André Broucke	André Broucke	O	G
Ken Bruns	Lumenpulse Lighting Inc.	Lumenpulse Lighting Inc.	O	MP
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

Name	Company	Representing	Voting status	Int. cat.
Sang-II Choi	Kyungpook National University	Kyungpook National University	O	G
Jon Chuchla	Audio Visual Systems, Inc.	Audio Visual Systems, Inc.	O	G
Soo-Myong Chung	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Paul J. Clark	HxDx	HxDx	O	CP
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	G
Fraser Connolly	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	DE
Eric Cornwell	West Side Systems	West Side Systems	O	U
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	O	U
Klas Dalbjorn	Labgruppen AB	TC Group	O	MP
Ben Darrington	Wireless Solutions Sweden AB	Wireless Solutions Sweden AB	O	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Jeremy Day	Lumenpulse Lighting Inc.	Lumenpulse Lighting Inc.	O	MP
Gilray Densham	CAST Software	CAST Group Inc	O	MP
Larry Dew	W.A. Benjamin Electric Co.	W.A. Benjamin Electric Co.	O	DE
Casey Diers	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	A	DR
Gary Douglas	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Tucker Downs	Tucker Downs	Tucker Downs	O	U
Yongshun Duan	Macostar Physics Application Technology Development (Wuhan) Ltd.	Macostar International Ltd.	O	CP
Hamish Dumbreck	JESE Ltd.	James Embedded Systems Engineering	O	MP
Lauren E. Dunn	Lauren E. Dunn (Larry)	Lauren E. Dunn (Larry)	O	DE
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
James Eade	ABTT	ABTT	O	G
Andrew Eales	Wellington Institute of Technology	Rhodes University	O	U
Matthew Earnshaw	acdc LED Ltd.	acdc LED Ltd.	O	MP

Name	Company	Representing	Voting status	Int. cat.
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	P	DE
Paul K. Ericson	Sparling	Sparling & IES	O	DE
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Derek R. Flickinger	Interactive Homes, Inc.	Interactive Homes, Inc.	O	U
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Howard Forryan	Harting Ltd.	Harting KGAA	O	G
Randy L. Fox	Walt Disney Company	Walt Disney Company	A	U
Andrew Frazer	Stellascapes.com	Stellascapes.com	P	MP
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	O	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Erin Grabe	PLASA NA	PLASA NA	exf	G
Tom Grimes	High End Systems, Inc.	Barco	O	MP
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Rob Halliday	Rob Halliday	Rob Halliday	O	U
Sean Harding	High Output, Inc.	High Output, Inc.	O	G
Mitch Hefter	Mitch Hefter	USITT	P	U
Douglas Heriot	Douglas Heriot	Douglas Heriot	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Jeremy Hochman	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Harrison Hohnholt	City Theatrical, Inc.	City Theatrical, Inc.	A	MP
Jim Holladay	Luxence	Luxence	O	G

Name	Company	Representing	Voting status	Int. cat.
Maurits van der Hoorn	Pathway Connectivity	Acuity Brands Inc.	A	MP
Wayne David Howell	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	DE
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Il Soon JANG	ETRI	Electronics and Telecommunications Research Institute	A	G
Sierk Janszen	Kiss Box	Ground Zero	O	U
Eric Johnson	Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	P	CP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Tae Gyu Kang	ETRI	Electronics and Telecommunications Research Institute	O	G
Michael Karlsson	LumenRadio AB	LumenRadio AB	P	MP
Reza Khanmalek	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Hyun Jong Kim	ETRI	Electronics and Telecommunications Research Institute	A	G
Peter Kirkup	LumenRadio AB	LumenRadio AB	A	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Phil Klapwyk	IATSE Local 891	IATSE Local 891	O	U
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	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	DIN, NVBF Committee	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
Hans Lau	LumenRadio AB	LumenRadio AB	A	MP
Michael Lay	Philips Color Kinetics	Royal Philips	P	MP
Rick Leinen	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	O	MP

Name	Company	Representing	Voting status	Int. cat.
Hans Leiter	ETC GmbH	Electronic Theatre Controls, Inc.	O	MP
Jon Lenard	Applied Electronics	Applied Electronics	O	MP
Maarten Lepelaars	eldoLED	eldoLED	O	MP
Sang-Kyu Lim	ETRI	Electronics and Telecommunications Research Institute	P	G
Joshua Liposky	Lex Products Corp.	Lex Products Corp.	A	CP
Dan Lisowski	Dept. Of Theatre and Drama	University of Wisconsin - Madison	P	DE
Kevin Loewen	Pathway Connectivity Inc.	Acuity Brands Inc.	P	MP
Mark Manthei	Shure Inc.	Shure Inc.	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Paul Kenneth McEwan	Zero 88	Cooper Controls Ltd.	O	MP
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Jeff T. Miller	Worldwide Standards and Auditing	Walt Disney Company	O	U
Avraham "Avi" Mendall Mor	Lightswitch	Lightswitch	O	U
Joshua Moyerman	Stellascapes.com	Stellascapes.com	A	MP
John Musarra	John Musarra	John Musarra	O	U
Tobin Neis	Barbizon Companies	Barbizon Companies	O	DR
Peter Newman	Open Lighting Project	Open Lighting Project	A	G
Simon Newton	Open Lighting Project	Open Lighting Project	P	G
Dan T. Nguyen	LynTec	LynTec	O	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Andrew Nikel	City Theatrical, Inc.	City Theatrical, Inc.	A	MP
Kimberly Corbett Oates	Schuler Shook	Schuler Shook	P	DE
Claude Ostyn	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Lars F. Paape	Scientific Algorithms and Embedded Systems	Scientific Algorithms and Embedded Systems	O	U

Name	Company	Representing	Voting status	Int. cat.
Edward A. (Ted) Paget	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Ben Peoples	Pittsburgh Hoist & Sandbag Company	Pittsburgh Hoist & Sandbag Company	O	CP
Jason Potterf	Cisco	Cisco	P	MP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Gordan Rancic	Phoenix Service srl	Phoenix Service srl	O	MP
Torben Kaas Rasmussen	Martin Professional A/S	Martin Professional A/S	O	G
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	MP
Steve Roberts	Carr & Angier	Carr & Angier	O	G
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	MP
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Karl G. Ruling	PLASA NA	PLASA NA	exf	G
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	MP
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	O	MP
Larry Schoeneman	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	P	DR
Martin Searancke	Dream Solutions Ltd.	Dream Solutions Ltd.	O	MP
John Sellers	AIM Northwest	AIM Northwest	O	G
Ford Sellers	Chauvet Lighting	Chauvet Lighting	O	MP
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Sean Sill	Open Lighting Project	Open Lighting Project	O	G
Ashley Simper	TMB	TMB	O	DR
Storm K. Staley	Stormwerx	Stormwerx	O	U
Eckart Steffens	Soundlight, the DMX Company	Soundlight, the DMX Company	P	CP

Name	Company	Representing	Voting status	Int. cat.
Ralph Stillinger	Strand Lighting	Royal Philips	O	MP
Dane Styczynski	Dept. Of Theatre and Drama	University of Wisconsin - Madison	A	DE
Bart Swinnen	Luminex LCE	Luminex LCE	O	MP
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	U
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
Christopher Tilton	Westlake Reed Leskosky	Westlake Reed Leskosky	O	DE
Robert Timmerman	Philips Color Kinetics	Royal Philips	O	MP
David Timmins	Jands Electronics	Jands Electronics	O	MP
Victoria Tisdale	Colby College	Google Summer of Code 2013	O	G
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP
Bob Toms	Catalyst Microsystems LLC	Catalyst Microsystems LLC	O	G
Robert Tooker	Robert Tooker	Robert Tooker	O	U
Tad Trylski	Tad Trylski	Tad Trylski	O	U
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP
Tracy Underhill	4U Consulting	4U Consulting	O	G
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Samuli Valo	Picturall Ltd.	Picturall Ltd.	O	MP
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
Oliver Waits	Avolites Ltd.	Avolites Ltd.	O	MP
John Warwick	Philips Color Kinetics	Royal Philips	O	MP
Colin Waters	TMB	TMB	O	DR
Ralph Weber	ENDL Texas	ENDL Texas	O	G

Name	Company	Representing	Voting status	Int. cat.
Lars Wernlund	Capture Visualisation AB	Capture Visualisation AB	O	MP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
C. S. Wong	Macostar International Ltd.	Macostar International Ltd.	O	CP
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Kehang Wu	Shure Inc.	Shure Inc.	O	G
David Yellin	LightMinded Industries, Inc.	LightMinded Industries, Inc.	O	MP
Larry Zoll	Zoll Design & Consulting, LLC	Zoll Design & Consulting, LLC	O	U

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